Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-14162-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: **05.11.2021**

Date of issue: 05.11.2021

Holder of certificate:

WESSLING GmbH

at the locations:

Oststraße 5-7, 48341 Altenberge
Haynauer Straße 60, 12249 Berlin
Am Umweltpark 1, 44793 Bochum
Kohlenstraße 51-55, 44795 Bochum
Ladestraße 3-3a, 28197 Bremen
Moritzburger Weg 67, 01109 Dresden
Feodor-Lynen-Straße 23, 30625 Hannover
Herlingsburg 20, 22529 Hamburg
Zollstockgürtel 57, 50969 Köln
Daniel-Seizinger-Weg 8, 68307 Mannheim
Forstenrieder Straße 8-14, 82061 Neuried
Hallesches Dreieck 4/5, 06188 Landsberg OT Oppin
Impexstraße 5, 69190 Walldorf
Rudolf-Diesel-Straße 23, 64331 Weiterstadt

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories. Laboratories that conform to the requirements of this standard, operate generally in accordance with the principles of DIN EN ISO 9001.

The certificate together with the annex reflects the status as indicated by the date of issue.
The current status of any given scope of accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH at https://www.dakks.de/en/content/accredited-bodies-dakks.

Tests in the fields:

Sampling of water, waste water, water from aquifers, from barrages and lakes, from running waters, from soils, waste, mineral oils and mineral oil products as well as fuels, wood waste, dusts, slags, ashes, soil gas and gases;
Physical, physico-chemical, chemical, biological and microbiological analysis of water, waste water, ground and surface water, raw water, swimming pool and bathing pool water, process water, aqueous eluates, soils, sludges, sediments, material samples, organic fertilisers, soil improvers and soil substrates, fermentation residues, compost, biowaste, fuels and sewage sludges;
Ecotoxicological and biological analysis of water, waste water, groundwater and running waters;
Sampling and sensory, chemical, biological and microbiological analysis of foodstuffs, feedstuffs, commodities and cosmetics and molecular biological analysis of foodstuffs and feedstuffs;
Analysis of polyhalogenated dibenzo-p-dioxins and dibenzofurans in water, waste water, soil, sediments, sewage sludge, organic fertilisers, soil improvers and soil substrates, compost and biowaste, dusts, slags, ashes, demolition material, foodstuffs, feedstuffs, emissions and indoor environments;
Determination of aerosols, inorganic and organic gases and vapours and of selected parameters for workplace measurements in accordance with the German Ordinance on Hazardous Substances, Section 7 (10);
Determination of inorganic and organic gaseous or particulate airborne substances;
Special sampling of substances requiring additional effort for sampling or analysis, determination of combustion conditions, calibration and functional tests of continuously operating emission measuring equipment for inorganic and organic gas or particulate airborne substances, calibration and functional tests of continuously operating emission measuring equipment for inorganic and organic gas or particulate airborne substances in systems in accordance with 4th BImSchV, Annex column 1, Calibration and functional tests of measuring equipment for combustion chamber measurements;
Determination of biological, inorganic and organic gaseous or particulate airborne substances in indoor environments, test chamber analysis;
Determination (analysis) of fibrous particles for workplace measurements and (sampling and analysis) in indoor environments and in solids, dusts and soils;
Sampling and microbiological analysis of industrial water in accordance with Section 3 (8) 42nd BImSchV;
Sampling of raw and drinking water;
Analysis in accordance with the German Drinking Water Ordinance with the exception of radioactive substances;
Specialist modules for water, soil, contaminated sites and waste;
Module for immission control;

Field: Medicinal products and active ingredients
Test area: Biological analysis of medicinal products, active ingredients and excipients

For the test fields marked with */ , the testing laboratory is permitted to do the following without obtaining prior notification and consent from DAkkS GmbH**

***** **Freely select standard test methods or equivalent test methods.**
****** **Modify test methods and develop new test methods.**

The test methods listed are given by way of example.

Within the scope of accreditation marked *, the testing laboratory is permitted to apply the listed standardised or equivalent test methods with different versions without obtaining prior notification and consent from DAkkS.**

The testing laboratory has an up-to-date list of all test methods within the flexible scope of accreditation.

The test methods are marked with the following symbols for the locations at which they are carried out:

AL = Altenberge
BE = Berlin
BO = Bochum (Am Umweltpark)
BO^{i} = Bochum (Kohlenstraße)
BR = Bremen
DR = Dresden
HH = Hamburg
HA = Hannover
KO = Köln
MA = Mannheim
MÜ = München (Neuried)
OP = Oppin
RM = Rhein-Main (Weiterstadt)
WA = Walldorf

Sections 12, 13 und 16
(PN) = Sampling, (Mess) = Analysis, (PRV) = Sample preparation

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1 Analysis of water, (waste water, ground and surface water, raw water, drinking water, mineral, spring and bottled water, swimming pool and bathing pool water, bathing waters, water from recooling systems, ventilation and air-conditioning systems and aqueous eluates) ***

1.1 Sampling and sample preparation

DIN EN ISO 5667-1 (A 4) 2007-04	Water quality - Sampling - Part 1: Guidance on the design of sampling programmes and sampling techniques	AL, BE, BO, BR, DR, HA, HH, MA, MÜ, OP, RM, WA
DIN 38402-A 11 2009-02	Sampling of waste water	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DIN 38402-A 12 1985-06	Sampling from barrages and lakes	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DIN 38402-A 13 1985-12	Sampling from aquifers	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DIN ISO 5667-5 (A 14) 2011-02	Water quality - Sampling - Part 5: Guidance on sampling of drinking water from treatment works and piped distribution systems	AL, BE, BO, BR, DR, HA, MA, MÜ, OP, RM, WA
DIN 38402-A 15 2010-04	Sampling from running waters	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DIN EN ISO 5667-6 (A 15) 2016-12	Water quality - Sampling - Part 6: Guidance on sampling of rivers and streams	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DIN EN ISO 5667-3 (A 21) 2019-07	Water quality - Sampling - Part 3: Preservation and handling of water samples	AL, BE, BO, BR, DR, HA, HH, MA, MÜ, OP, RM, WA
DIN 38402-A 30 1998-07	Pretreatment, homogenisation and aliquotation of non-homogeneous water samples	AL, BE, BO, DR, HA, MÜ, OP, RM, WA

DIN EN ISO 15587-1 (A 31) 2002-07	Water quality - Digestion for the determination of selected elements in water - Part 1: Aqua regia digestion	AL, HA, MÜ, OP, RM
DIN EN ISO 15587-2 (A 32) 2002-07	Water quality - Digestion for the determination of selected elements in water - Part 2: Nitric acid digestion	AL, HA, MÜ, OP, RM
DIN EN ISO 19458 (K 19) 2006-12	Water quality - Sampling for microbiological analysis	AL, BE, BO, BR, DR, HA, HH, MA, MÜ, OP, RM, WA
ISO 5667-4 2016-06	Water quality - Sampling - Part 4: Guidance on sampling from lakes, natural and man-made	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
ISO 5667-11 2009-04	Water quality - Sampling - Part 11: Guidance on sampling of groundwaters	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DIN 4030-2 2008-06	Assessment of water, soil and gases for their aggressiveness to concrete - Part 2: Sampling and analysis of water and soil samples (Restriction: *Here for sampling of water*)	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DIN 19643-1 2012-11	Treatment of swimming pool and bathing pool water - Part 1: General requirements (Restriction: *Here only sampling*)	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
LAGA PN 1/75 1975	Sampling of water	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
VDI 2047 Blatt 2 2015-01	Open recooler systems - Securing hygienically sound operation of evaporative cooling systems (VDI Cooling Tower Code of Practice) (Restriction: *Here only sampling*)	AL, BE, BO, BR DR, HA, HH, MA, MÜ, OP, RM, WA
DVGW W 112 2011-10	Sampling of water for the development, extraction and monitoring of groundwater Principles of groundwater sampling from groundwater monitoring wells	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DVGW W 115 2008-07	Drilling for the investigation, extraction and observation of groundwater	BE

DVGW W 121 2003-07	Construction and expansion of groundwater monitoring wells	BE
DVWK Regeln 128 1992	Deutscher Verband für Wasserwirtschaft und Kulturbau e. V. (German Association for Water Management and Land Improvement): Scope of sampling and examination of groundwater samples	AL, BE, BO, DR, HA, MÜ, RM, OP, WA
DVWK Regeln 136 1999	Deutscher Verband für Wasserwirtschaft und Kulturbau e. V. (German Association for Water Management and Land Improvement): Pedological examination in the field for the determination of characteristics for site characterisation - Part II: Discharges to the water and air balance of soils	AL, BO[i], OP
DVWK Data Sheet 245 1997	Deutscher Verband für Wasserwirtschaft und Kulturbau e. V. (German Association for Water Management and Land Improvement): Depth-oriented sampling from groundwater monitoring wells	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DWA 909 2011-12	Principles of groundwater sampling	AL, BE, BO, DR, HA, MÜ, OP, RM, WA

1.2 Physical and physico-chemical parameters and sensory testing

DEV B 1/2 1971	Test for odour and flavour	AL, BE, BO, BR, DR, HA, HH, MA, MÜ, OP, RM, WA
DIN EN 1622 (B 3) 2006-10	Water quality - Determination of the threshold odour number (TON) and threshold flavour number (TFN) (Restriction: *Laboratory analysis only AL and HA, only quantitative determination of TON*) (Restriction: Sampling *only Annex C*)	AL, BE, BO, BR, DR, HA, HH, MA, MÜ, RM, OP, WA
DIN EN ISO 7887 (C 1) 2012-04	Water quality - Examination and determination of colour (Restriction: *Laboratory analysis only AL, HA, MÜ, OP*) (Restriction: *Sampling only method A*)	AL, BE, BO, BR, DR, HA, HH, MA, MÜ, OP, RM, WA

DIN EN ISO 7027 (C 2) 2000-04	Water quality - Determination of turbidity	AL, BE, BO, BR, DR, HA, MA, MÜ, OP, RM, WA
DIN 38404-C 3 2005-07	Determination of absorption in the range of UV radiation, spectral absorption coefficient	AL, HA, MÜ, OP
DIN 38404-C 4 1976-12	Determination of temperature	AL, BE, BO, BR, DR, HH, HA, MA, MÜ, OP, RM, WA
DIN EN ISO 10523 (C 5) 2012-04	Water quality - Determination of pH	AL, BE, BO, BR, DR, HA, MA, MÜ, OP, RM, WA
DIN 38404-C 6 1984-05	Determination of the oxidation reduction (redox) potential	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DIN EN 27888 (C 8) 1993-11	Water quality - Determination of electrical conductivity	AL, BE, BO, BR, DR, HA, MA, MÜ, OP, RM, WA
DIN 38404-C 10 2012-12	Calculation of the calcite saturation of water	AL, HA, OP
DIN EN ISO 7027-1 (C 21) 2016-11	Water quality - Determination of turbidity - Part 1: Quantitative method	AL, BE, BO, BR, DR, HA, MA, MÜ, OP, RM, WA
DIN EN ISO 7027-2 (C 22) 2019-06	Water quality - Determination of turbidity - Part 2: Semi-quantitative methods for the assessment of transparency of waters	AL, BE, BO, BR, DR, HA, MA, MÜ, OP, RM, WA

1.3 Gaseous components

DIN EN ISO 7393-2 (G 4-2) 2019-03	Water quality - Determination of free chlorine and total chlorine - Part 2: Colorimetric method using N,N- dialkyl -1,4-phenylenediamine, for routine control purposes	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DIN EN ISO 5814 (G 22) 2013-02	Water quality - Determination of dissolved oxygen - Electrochemical probe method	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DIN ISO 17289 (G 25) 2014-12	Water quality - Determination of dissolved oxygen - Optical sensor method	AL, BE, BO, DR, HA, MÜ, OP, RM, WA

1.4 Anions

DIN EN ISO 14403-2 (D 3) 2012-10	Water quality - Determination of total cyanide and free cyanide using flow analysis (FIA and CFA) - Part 2: Method using continuous flow analysis (CFA)	AL, HA, MÜ, OP, RM, WA
DIN 38405-D 4 1985-07	Determination of fluoride	AL, MÜ, OP
DIN 38405-D 8 1971	Calculation of dissolved carbon dioxide, carbonate and hydrogen carbonation	AL, HA, MÜ, OP, RM
DIN EN 26777 (D 10) 1993-04	Water quality - Determination of nitrite - Spectrometric method	AL, HA, MÜ, OP
DIN EN ISO 6878 (D 11) 2004-09	Water quality - Determination of phosphorus - Ammonium molybdate photometric method	AL, HA, OP
DIN 38405-D 13 2011-04	Determination of cyanides (Restriction: *Only readily liberated cyanide*)	AL

DIN EN ISO 10304-1 (D 20) 2009-07	Water quality - Determination of dissolved anions by liquid chromatography of ions - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulphate (Restriction: AL without nitrite, nitrate and phosphate; MÜ without bromide, nitrite and phosphate; OP without nitrite and phosphate; RM: without phosphate) (Modification: RM: *Also formate and acetate)*	AL, HA, MÜ, OP, RM
DIN 38405-D 21 1990-10	Determination of dissolved silicate by spectrometry	AL, OP
DIN EN ISO 10304-3 (D 22) 1997-11	Water quality - Determination of dissolved anions by liquid chromatography of ions - Part 3: Determination of chromate, iodide, sulphite, thiocyanate and thiosulphate (Restriction: *AL only sulphite; HA only thiocyanate and thiosulphate, RM: only iodide, thiocyanate, thiosulphate*)	AL, HA, RM
DIN 38405-D 24 1987-05	Photometric determination of chromium(VI) using 1,5-diphenylcarbonohydrazide	AL, HA, MÜ, OP
DIN 38405-D 26 1989-04	Photometric determination of dissolved sulphide	AL, HA, OP
DIN 38405-D 27 1992-07	Determination of readily liberated sulphide	AL, HA, OP
DIN 38405-D 27 2017-10	Determination of sulphide by gas extraction (Modification: *Photometric method*) (Restriction: *AL, OP only dissolved sulphide as per D 27-1*)	AL, HA, OP
DIN EN ISO 15061 (D 34) 2001-12	Water quality - Determination of dissolved bromate - Method by liquid chromatography of ions	AL
DIN EN ISO 18412 (D 40) 2007-02	Water quality - Determination of chromium(VI) - Photometric method for weakly contaminated water	AL, HA, MÜ, OP

DIN EN ISO 15681-2 (D 46) 2019-05	Water quality - Determination of orthophosphate and total phosphorus contents by flow analysis (FIA and CFA) - Part 2: Method using continuous flow analysis (CFA) (Restriction: *Only orthophosphate*)	HA
WES 816 2015-10	Determination of perchlorate by ion chromatography in water	RM

1.4.1 Determination of anions in waste water, ground and surface water, raw water, drinking water, mineral, spring and bottled water, swimming pool and bathing pool water and aqueous eluates by ion chromatography (LC-LF/UV) *

DIN EN ISO 10304-1 (D 20) 2009-07	Water quality - Determination of dissolved anions by liquid chromatography of ions - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulphate (Restriction: *RM without phosphate*)	RM
DIN EN ISO 10304-3 (D 22) 1997-11	Water quality - Determination of dissolved anions by liquid chromatography of ions - Part 3: Determination of chromate, iodide, sulphite, thiocyanate and thiosulphate (Restriction: *Only iodide, thiocyanate, thiosulphate*)	RM
DIN EN ISO 10304-4 (D 25) 1999-07	Water quality - Determination of dissolved anions by liquid chromatography of ions - Part 4: Determination of chlorate, chloride and chlorite in water with low contamination	RM
DIN EN ISO 15061 (D 34) 2001-12	Water quality - Determination of dissolved bromate - Method by liquid chromatography of ions	RM
EPA Method 218.7 2011-11	Determination of hexavalent Chromium in drinking water by ion chromatography with post-column derivatization and UV-visible spectroscopic detection	RM

1.5 Cations

DIN 38406-E 1 1983-05	Determination of iron	AL, OP

DIN 38406-E 2 1983-05	Determination of manganese	HA
DIN 38406-E 5 1983-10	Determination of ammonia-nitrogen	AL, HA, MÜ, OP
DIN EN ISO 12846 (E 12) 2012-08	Water quality - Determination of mercury - Method using atomic absorption spectrometry (AAS) with and without enrichment (Restriction: *AL, HA, MT OP, RM without enrichment*)	AL, HA, MÜ, OP, RM
DIN EN ISO 11885 (E 22) 2009-09	Water quality - Determination of selected elements by inductively coupled plasma atomic emission spectroscopy (ICP-OES)	AL, HA, MÜ, OP
DIN EN ISO 11732 (E 23) 2005-05	Water quality - Determination of ammonium nitrogen - Method by flow analysis (CFA and FIA) and spectrometric detection	HA, OP
DIN EN ISO 17294-2 (E 29) 2017-01	Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (Modification: *HA, RM also determination of bromine and iodine*)	AL, HA, MÜ, RM, WA

1.6 Summary indices of actions and substances

DIN 38409-H 1 1987-01	Determination of total dry residue, filtrate dry residue and residue on ignition	AL, HA, MÜ, OP
DIN 38409-H 2 1987-03	Determination of filterable matter and the residue on ignition	AL, HA, MÜ, OP
DIN EN 1484 (H 3) 2019-04	Water analysis - Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC)	AL, HA, MÜ, OP, RM
DIN EN ISO 8467 (H 5) 1995-05	Water quality - Determination of permanganate index	AL, HA, MÜ, OP
DIN 38409-H 6 1986-01	Water hardness (Modification: *Determination of calcium and magnesium content with ICP-OES or ICP-MS*)	AL, HA, MÜ, OP, RM

DIN 38409-H 7 2005-12	Determination of acid and base-neutralising capacities	AL, HA, MÜ, OP
DIN 38409-H 8 1984-09	Determination of extractable organically bonded halogens (EOX)	AL
DIN 38409-H 9 1980-07	Determination of the settleable matter by volume in water and waste water	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DIN EN 25663 (H 11) 1993-11	Water quality - Determination of Kjeldahl nitrogen - Method after digestion with selenium (Modification AL: *Digestion with titanium dioxide catalyst*)	AL, OP
DIN EN ISO 9562 (H 14) 2005-02	Water quality - Determination of adsorbable organically bound halogens (AOX)	AL, HA
DIN 38409-H 16 1984-06	Determination of the phenol index	HA
DIN 38409-H 23 2010-12	Determination of bismuth active substances (Modification: *Determination of bismuth by ICP-OES*)	HA
DIN EN 903 (H 24) 1994-01	Water quality - Determination of anionic surfactants by measurement of the methylene blue index MBAS	OP
DIN EN 872 (H 33) 2005-04	Water quality - Determination of suspended solids - Method by filtration through glass fibre filters	AL, HA, OP
DIN EN 12260 (H 34) 2003-12	Water quality - Determination of nitrogen - Determination of bound nitrogen (TNb), following oxidation to nitrogen oxides	HA, OP
DIN EN ISO 14402 (H 37) 1999-12	Water quality - Determination of phenol index by flow analysis (FIA and CFA)	AL, MÜ, OP, RM, WA
DIN 38409-H 41 1980-12	Determination of chemical oxygen demand (COD) in the range over 15 mg/l	AL, HA
DIN ISO 15705 (H 45) 2003-01	Water quality - Determination of the chemical oxygen demand index (ST-COD) - small-scale sealed tube method	AL, OP

DIN EN 1899-1 (H 51) 1998-05	Water quality - Determination of biochemical oxygen demand after n days (BODn) - Part 1: Dilution and seeding method with allylthiourea acid addition	AL
DIN EN 1899-2 (H 52) 1998-05	Water quality - Determination of biochemical oxygen demand after n days (BODn) - Part 2: Methods for undiluted samples	AL
DIN EN ISO 9377-2 (H 53) 2001-07	Water quality - Determination of hydrocarbon oil index - Part 2: Method using solvent extraction and gas chromatography	AL, HA, MÜ, OP, RM
DIN ISO 11349 (H 56) 2015-12	Water quality - Determination of low-volatility lipophilic substances - Gravimetric method	AL, HA
DIN 38413-P 1 1982-03	Determination of hydrazine	AL, HA
DIN 4030-2 2008-06	Assessment of water, soil and gases for their aggressiveness to concrete - Part 2: Sampling and analysis of water and soil samples (Restriction: *Here analysis of water samples*) (Modifications: *Determination of elements by ICP-MS/OES, of ammonium by photometer/CFA, of anions by IC, of sulphide by photometer)*	AL, HA, MÜ, OP

1.7 Rapid test methods with finished reagents

Macherey & Nagel Visocolor 931051 2015-11	Determination of cationic surfactants (CTAB) Measuring range: 1-20 mg/L CTAB	HA

1.8 Organic contaminants by gas chromatography

DIN EN ISO 10301 (F 4) 1997-08	Water quality - Determination of highly volatile halogenated hydrocarbons - Gas-chromatographic methods (Modification: *Also mono and dichlorobenzenes*)	AL, HA, MÜ, OP, RM

DIN 38407-F 9 1991-05	Determination of benzene and some of its derivatives by gas chromatography (Modification: *Also determination of naphthalenes*) (Modification: *MÜ also determination of n-alkanes, white spirits*) (Modification: *OP also determination of C5 to C12 alkanes*)	AL, HA, MÜ, OP, RM
DIN EN 12918 (F 24) 1999-11	Water quality - Determination of parathion, parathion-methyl and some other organophosphorus compounds in water by dichloromethane - extraction and gas chromatographic analysis (Modification: *Extraction by SPE*)	AL

1.9 Determination of organic parameters in waste water, ground and surface water, raw water, drinking water, mineral, spring and bottled water, swimming pool and bathing pool water and aqueous eluates

1.9.1 By gas chromatography with conventional detectors GC-ECD, -FID, -FPD, -MS) *

DIN EN ISO 6468 (F 1) 1997-02	Water quality - Determination of certain organochlorine insecticides, polychlorinated biphenyls and chlorobenzenes - Gas-chromatographic method after liquid-liquid extraction (Restriction*: Without chlorobenzenes*)	AL
DIN 38407-F 2 1993-02	Determination of low volatile halogenated hydrocarbons by gas chromatography	AL
DIN 38407-F 3 1998-07	Gas chromatographic determination of polychlorinated biphenyls (PCB)	AL, HA, RM
DIN EN ISO 10301 (F 4) 1997-08	Water quality - Determination of highly volatile halogenated hydrocarbons - Gas-chromatographic methods	AL, HA, MÜ, OP, RM
DIN EN ISO 10695 (F 6) 2000-11	Water quality - Determination of selected organic nitrogen and phosphorus compounds - Gas-chromatographic method	AL
DIN 38407-F 9 1991-05	Determination of benzene and some of its derivatives by gas chromatography	AL, HA, MÜ, OP, RM

DIN EN 12673 (F 15) 1999-05	Water quality - Gas chromatographic determination of some selected chlorophenols in water	AL
DIN 38407-F 30 2007-12	Determination of trihalogenmethanes in bathing water and pool water with headspace-gas chromatography	AL, HA
DIN 38407-F 39 2011-09	Water quality - Determination of selected polycyclic aromatic hydrocarbons (PAHs) - Method using gas chromatography with mass spectrometric detection (GC-MS)	AL, HA
DIN 38407-F 43 2014-10	Determination of selected easily volatile organic compounds in water - Method using gas chromatography and mass spectrometry by static headspace technique	AL, HA, MÜ. OP, RM
DIN EN 14207 (P 9) 2003-09	Water quality - Determination of epichlorohydrin	AL

1.9.2 By gas chromatography with tandem mass spectrometry (GC-MS/MS)

DIN EN ISO 10695 (F 6) 2000-11	Water quality - Determination of selected organic nitrogen and phosphorus compounds - Gas-chromatographic method	AL
DIN EN ISO 17353 (F 13) 2005-11	Water quality - Determination of selected organotin compounds - Gas-chromatographic method	OP

1.10 Determination of organic contaminants

1.10.1 By high-performance liquid chromatography with conventional detectors (HPLC-DAD, -FLD)

DIN EN ISO 17993 (F 18) 2004-03	Water quality - Determination of 15 polycyclic aromatic hydrocarbons (PAHs) in water by HPLC with fluorescence detection after liquid-liquid extraction (Modification*: Also methylnaphtaline*)	AL, HA, MÜ, OP, RM
DIN EN ISO 22478 (F 21) 2006-07	Water quality - Determination of selected explosives and related compounds - Method using high performance liquid chromatography (HPLC) with UV detection	AL

DIN 38407-F 22 2001-10	Determination of glyphosate and aminomethyl phosphic acid (AMPA) by high performance liquid chromatography (HPLC), post-column derivatisation and fluorescence detection (Modification: *Pre-column derivatisation*)	MÜ
DIN ISO 16000-3 2013-01	Indoor air - Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and in test chambers - Pumped sampling (Modification: *Measurement of water samples with and without enrichment via SPE columns*)	HA

1.10.2 By high performance liquid chromatography with mass spectrometry (HPLC-MS, HPLC-MS/MS, HPLC-HRMS) *

WES 735 2013-11	Determination of quaternary ammonium compounds in water by LC-MS/MS	AL
WES 1185 2019-08	Determination of 1,2,4-triazole in water by LC-MS/MS	AL
WES 1346 2020-12	Determination of trifluoroacetic acid in water by IC-MS/MS	AL

1.11 Determination of organic contaminants in waste water, groundwater and surface water, raw water, drinking water, mineral, spring and bottled water, swimming pool and bathing pool water and aqueous eluates using high-performance liquid chromatography with mass spectrometry (HPLC-MS, HPLC-MS/MS, HPLC-HRMS) *

DIN 38407-F 35 2010-10	Determination of selected phenoxyalkyl carbonic acids and further acid plant treatment agents - Method using high performance liquid chromatography and mass spectrometric detection (HPLC-MS/MS)	AL
DIN 38407-F 36 2014-09	Determination of selected active substances of plant protection products and other organic substances in water - Method using high performance liquid chromatography and mass spectrometric detection (HPLC-MS/MS or -HRMS) after direct injection	AL

DIN 38407-F 42 2011-03	Determination of selected polyfluorinated compounds (PFC) in water - Method using high performance liquid chromatography and mass spectrometric detection (HPLC/MS-MS) after solid-liquid extraction	AL
DIN 38407-F 47 2017-07	Determination of selected active pharmaceutical ingredients and other organic substances in water and waste water - Method using high performance liquid chromatography and mass spectrometric detection (HPLC-MS/MS or HRMS) after direct injection	AL
DIN 38413-P 6 2007-02	Determination of acrylamide - Method using high performance liquid chromatography with mass spectrometric detection (HPLC-MS/MS)	AL
DIN 38414-S 14 2011-08	Determination of selected polyfluorinated compounds (PFC) in sludge, compost and soil - Method using high performance liquid chromatography and mass spectrometric detection (HPLC-MS/MS)	AL

2 Analysis of soil, sludges, sewage sludges, sediments, waste, materials for recycling, wood waste, wood, organic fertilisers, soil improvers, topsoil and growing media, compost and biowaste, fermentation residues ***

2.1 Sampling

DIN EN ISO 5667-13 (S 1) 2011-08	Water quality - Sampling - Part 13: Guidance on sampling of sludges	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
DIN 38414-S 11 1987-08	Sampling of sediments	AL, BE, BO, BOi, DR, HA, HH, KO, MA, MÜ, OP, RM, WA
ISO 10381-8 2006-04	Soil quality - Sampling - Part 8: Guidance on sampling of stockpiles	AL, BE, BO, BO[i], BR, DR, HA, HH, KO, MA, MÜ, OP, RM, WA

DIN ISO 10381-1 2003-08	Soil quality - Sampling - Part 1: Guidance on the design of sampling programmes	AL, BE, BO, BO[i], BR, DR, HA, HH, KO, MA, MÜ, O
DIN ISO 10381-2 2003-08	Soil quality - Sampling - Part 2: Guidance on sampling techniques	AL, BE, BO[i], HA, HH, KO, MA, OP,-WA
DIN ISO 10381-3 2002-08	Soil quality - Sampling - Part 3: Guidance on safety	AL, BE, BO, BO[i], BR, DR, HA, HH, KO, MA, MÜ, OP, RM, WA
DIN ISO 10381-4 2004-04	Soil quality - Sampling - Part 4: Guidance on the procedure for investigation of natural, near-natural and cultivated sites	AL, BE, BO, BO[i], HA, HH, KO, MA, OP
DIN ISO 10381-5 2007-02	Soil quality - Sampling - Part 5: Guidance on the procedure for the investigation of urban and industrial sites with regard to soil contamination	AL, BE, BO[i], HA, HH, KO, MA, OP
DIN EN ISO 14688-1 2020-11	Geotechnical investigation and testing - Identification and classification of soil - Part 1: Identification and description	AL, BE, BO[i], HA, HH, KO, MA, OP
DIN EN ISO 14688-2 2020-11	Geotechnical investigation and testing - Identification and classification of soil - Part 2: Principles for a classification	AL, BE, BO[i], HA, HH, KO, MA, OP
DIN EN ISO 14689 2018-05	Geotechnical investigation and testing - Identification and classification of rock	AL, BE, BO[i], HA, HH, KO, MA, OP
DIN EN ISO 22155 2016-07	Soil quality - Gas-chromatographic determination of volatile aromatic and halogenated hydrocarbons and selected ethers - Static headspace method (Restriction: *Only overlay of soil with solvent in the field*)	AL, BE, BO, BO[i], BR, DR, HA, HH, KO, MA, MÜ, OP, RM, WA
DIN ISO 18400-100 2020-11	Soil quality - Sampling - Part 100: Umbrella	AL, BE,-BO[i], HA, HH, KO, MA, OP

DIN ISO 18400-101 2020-11	Soil quality - Sampling - Part 101: Framework for the preparation and application of a sampling plan	AL, BE, BO[i], HA, HH, KO, MA, OP
DIN ISO 18400-102 2020-11	Soil quality - Sampling - Part 102: Selection and application of sampling techniques	AL, BE, BO[i], HA, HH, KO, MA, OP
DIN ISO 18400-104 2020-11	Soil quality - Sampling - Part 104: Strategies	AL, BE, BO[i], HA, HH, KO, MA, OP
DIN ISO 18400-105 2020-11	Soil quality - Sampling - Part 105: Packaging, transport, storage, preservation	AL, BE, BO[i], HA, HH, KO, MA, OP
DIN ISO 18400-106 2020-11	Soil quality - Sampling - Part 106: Quality control and quality assurance	AL, BE, BO[i], HA, HH, KO, MA, OP
DIN ISO 18400-107 2020-11	Soil quality - Sampling - Part 107: Recording and reporting	AL, BE, BO[i], HA, HH, KO, MA, OP
DIN ISO 18400-202 2020-11	Soil quality - Sampling - Part 202: Recognition	AL, BE, BO[i], HA, HH, KO, MA, OP
DIN ISO 18400-203 2020-11	Soil quality - Sampling - Part 203: Investigation of potentially contaminated sites	AL, BE, BO[i], HA, HH, KO, MA, OP
DIN EN ISO 22475-1 2007-01	Geotechnical investigation and testing - Sampling methods and groundwater measurements - Part 1: Technical principles for execution	AL, BE, BO[i], HA, HH, KO, MA, OP, WA
DIN EN ISO 22476-2 2012-03	Geotechnical investigation and testing - Field testing - Part 2: Dynamic probing (Restriction: *only DPL*)	BO[i]
DIN EN 932-1 1996-11	Test for general properties of aggregates - Part 1: Methods of sampling	AL, BE, BO, BO[i], DR, HA, HH, KO, MA, , OP

DIN EN 12579 2014-02	Soil improvers and growing media - Sampling	AL, BE, BO, HA, OP, RM, WA
DIN EN 14899 2006-04	Characterization of waste - Sampling of waste materials - Framework for the preparation and application of a sampling plan	AL, BE, BO, BOi, BR, DR, HA, HH, KO, MA, MÜ, OP, RM, WA
DIN 4023 2006-02	Geotechnical investigation and testing - Graphical presentation of logs of boreholes, trial pits, shafts and adits	AL, BE, BO[i], BR, HA, HH, KO, MA, OP
DIN 4030-2 2008-06	Assessment of water, soil and gases for their aggressiveness to concrete - Part 2: Sampling and analysis of water and soil samples (Restriction: *Here for sampling of soil*)	AL, BE, BO, BO[i], BR, HA, HH, KO, MA, OP
DIN 19682-2 2014-07	Soil quality - Field tests - Part 2: Determination of soil texture	AL, BE, BO, BO[i], HA, HH, KO, MA, OP
DIN 19682-10 2014-07	Soil quality - Field tests - Part 10: Description and evaluation of soil structure	AL, BE, BO[i], HA, HH, KO, MA, OP
DIN 19698-1 2014-05	Characterisation of solids - Sampling of solid and semi-solid materials - Part 1: Guidance for the segmental sampling of stockpiles of unknown composite	AL, BE, BO, BO[i], BR, DR, HA, HH, MA, MÜ, OP, RM, WA
DIN 19747 2009-07	Investigation of solids - Pretreatment, preparation and processing of samples for chemical, biological and physical investigations (Restriction: *Sampling only*)	AL, BE, BO, BO[i], BR, DR, HA, HH, KO, MA, MÜ, OP, RM, WA
DIN 52101 2013-10	Aggregates test methods - Sampling	AL, BE, BO, BO[i], DR, HA, HH, MA, OP

DIN 52161-1 2006-06	Testing of wood preservatives - Detection of wood preservatives in wood - Sampling from structural timber in service	AL, BE, BO[i], BR, HA, HH, KO, MA, MÜ, OP
AbfKlärV Annex 2, Section 2.1 2017-09	Sampling of sewage sludge	AL, BE, BO, DR, HA, OP, RM, WA
AbfKlärV Annex 2, Section 1.1 2017-09	Sampling and preparation of soil	AL, BE, BO, HA, OP
AltholzV Annex IV No. 1.1 2002-08	Sampling of wood chips and wood shavings	AL, BE, BO, HA, OP, RM, WA
AltölV Annex 2, Section 1 2002-04	Sampling of waste oil	AL, BE, BO, HA, WA
BioAbfV Annex 3, No. 1.1 2013-04	Sampling of treated and untreated biowaste	AL, BE, BO, HA, OP, RM, WA
DepV Annex 4, No. 2 2009-04	Sampling	AL, BE, BO, BO[i], BR, DR, HA, HH, KO, MA, MÜ, OP, RM, WA
HLUG Handbuch Altlasten, Volume 7, Part 4 2000	Sampling after soil digestion for analysis of suspected contaminated sites and contaminated sites for volatile pollutants in accordance with “Determination of BTEX/volatile halogenated hydrocarbons in solids from brownfields”, overlay in the field	AL, BE, BO, BO[i], BR, DR, HA, HH, KO, MA, MÜ, OP, RM, WA
LAGA PN 98 2019-05	Guidelines on procedures for physical, chemical and biological examination in connection with the recycling/disposal of waste - Basic rules for the taking of samples from solid and semi-solid waste and deposited materials	AL, BE, BO, BO[i], BR, DR, HA, HH, KO, MA, MÜ, OP, RM, WA

LAGA PN 2/78 K 1983-12	Guideline on procedures for physical and chemical examination in connection with the disposal of waste - Basic rules for the taking of samples from waste and deposited materials	AL, BE, BO, BO[i], BR, DR, HA, HH, MA, MÜ, OP, RM, WA
LAGA PN 2/78 1983-12	Guidelines on procedures for physical and chemical examination in connection with the disposal of waste - Sampling and preparation of solid, sludgy and liquid waste	AL, BE, BO, BO[i], BR, DR, HA, HH, MA, MÜ, OP, RM, WA
Methodenhandbuch Kompost Section I.A 2006-09	Method book for the analysis of organic fertilisers, soil improvers and substrates, Gütegemeinschaft Kompost e. V., Cologne Sampling	AL, BE, BO, DR, HA, MÜ, OP, WA
DVWK Regeln 129 1995	Deutscher Verband für Wasserwirtschaft und Kulturbau e. V. (German Association for Water Management and Land Improvement): Pedological examination in the field for the determination of characteristics for site characterisation - Part 1: Designation of soils	AL, BO[i], MA, OP
Soil Science Working Group of the state offices for geology and the BGR (Federal Institute for Geosciences and Natural Resources) 2005	Bodenkundliche Kartieranleitung 5th Edition	AL, BE, BO[i], HA, HH, KO, MA, OP

2.2 Sample pretreatment and sample preparation

DIN 38414-S 4 1984-10	Determination of leachability with water	AL, HA, MÜ, OP, RM, WA
DIN EN 13346 (S 7a) 2001-04	Characterisation of sludges - Determination of trace elements and phosphorus - Aqua regia extraction methods (Modification: *Also digestion with DigiPREP*)	AL, OP
DIN 38414-S 22 2018-10	Determination of dry residue by freezing and preparation of the freeze-dried mass of sludge	AL, OP

DIN EN 1744-3 2002-11	Tests for chemical properties of aggregates - Part 3: Preparation of eluates by leaching of aggregates	AL, HA, MÜ
DIN EN 12457-1 2003-01	Characterisation of waste - Leaching - Compliance test for leaching of granular waste materials and sludges - Part 1: One stage batch test at a liquid to solid ratio of 2 l/kg with particle size below 4 mm (without or with size reduction)	AL
DIN EN 12457-2 2003-01	Characterisation of waste - Leaching - Compliance test for leaching of granular waste materials and sludges - Part 2: One stage batch test at a liquid to solid ratio of 10 l/kg with particle size below 4 mm (without or with size reduction)	AL, HA, MÜ, OP, RM, WA
DIN EN 12457-4 2003-01	Characterisation of waste - Leaching - Compliance test for leaching of granular waste materials and sludges - Part 4: One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 10 mm (without or with size reduction)	AL, HA, MÜ, OP, RM, WA
DIN EN 13650 2002-01	Soil improvers and growing media - Extraction of aqua regia soluble elements	AL
DIN EN 13656 2003-01	Characterisation of waste - Microwave assisted digestion with hydrofluoric (HF), nitric (HNO_3) and hydrochloric (HCl) acid mixture for subsequent determination of elements in waste (Restriction AL: *Extraction only with HNO_3 and HCl*)	AL, OP
DIN EN 13657 2003-01	Characterisation of waste - Digestion for subsequent determination of aqua regia soluble portion of elements in waste (Restriction: *MÜ, RM only thermal digestion*)	AL, HA, MÜ, OP, RM, WA
DIN EN 16174 2012-11	Sludge, treated biowaste and soil - Digestion of aqua regia soluble fractions of elements	AL, HA, MÜ, OP, RM, WA
DIN 19527 2012-08	Leaching of solid materials - Batch test for the examination of the leaching behaviour of organic substances at a liquid to solid ratio of 2 l/kg	AL, OP, RM
DIN 19528 2009-01	Leaching of solid materials - Percolation method for the joint examination of the leaching behaviour of inorganic and organic substances	AL, MÜ

DIN 19529 2015-12	Leaching of solid materials - Batch test for the examination of the leaching behaviour of inorganic and organic substances at a liquid to solid ratio of 2 l/kg	AL, OP, RM
DIN ISO 19730 2009-07	Soil quality - Extraction of trace elements from soil using ammonium nitrate solution	AL, MÜ
DIN 19747 2009-07	Investigation of solids - Pretreatment, preparation and processing of samples for chemical, biological and physical investigations	AL, HA, MÜ, OP, RM, WA
LAGA EW 98 2017-09	Guideline on procedures for the physical, chemical examination of waste, contaminated soils and materials from brownfields - Preparation and analysis of aqueous eluates	WA
Methodenbuch BGK e. V. Section I B 2006-09	Sample preparation	AL

2.3 Physical and physico-chemical parameters

DIN ISO 10390 2005-12	Soil quality - Determination of pH	AL, HA, MÜ, OP, RM, WA
DIN ISO 11265 1997-06	Soil quality - Determination of specific electrical conductivity	AL, OP, RM, WA
DIN ISO 11277 2002-08	Soil quality - Determination of particle size distribution in mineral soil material - Method by sieving and sedimentation (Restriction: *Annex B) Sedimentation by hydrometer method*)	AL
DIN EN ISO 17892-4 2017-04	Geotechnical investigation and testing - Laboratory testing of soil - Part 4: Determination of particle size distribution	AL
DIN EN 196-2 2013-10	Methods of testing cement - Part 2: Chemical analysis of cement (Restriction: *Only determination of the loss on ignition*)	OP

DIN EN 322 1993-08	Wood-based panels - Determination of moisture content	OP
DIN EN 13037 2012-01	Characterisation of sludge - Determination of pH-value	AL
DIN EN 13038 2012-01	Soil improvers and growing media - Determination of electrical conductivity	AL
DIN EN 13039 2012-01	Soil improvers and growing media - Determination of organic matter content and ash	AL
DIN EN 13040 2008-01	Soil improvers and growing media - Sample preparation for chemical and physical tests, determination of dry matter content, moisture content and laboratory compacted bulk density	AL
DIN EN 14346 2007-03	Characterisation of waste - Calculation of dry matter by determination of dry residue or water content	AL, HA, MÜ, OP, RM, WA
DIN EN 14629 2007-06	Products and systems for the protection and repair of concrete structures - Test methods - Determination of chloride content in hardened concrete	OP
DIN EN 15169 2007-05	Characterisation of waste - Determination of loss on ignition in waste, sludge and sediments	AL, HA, MÜ, OP, RM, WA
DIN EN 15216 2008-01	Characterisation of waste - Determination of total dissolved solids (TDS) in water and eluates	AL, HA, MÜ, OP, RM, WA
DIN EN 15933 2012-11	Sludge, treated biowaste and soil - Determination of pH	AL, MÜ. OP, RM, WA
DIN EN 15934 2012-11	Sludge, treated biowaste, soil and waste - Calculation of dry matter fraction after determination of dry residue or water content	AL, HA, MÜ, OP, RM, WA
DIN EN 15935 2012-11	Sludge, treated biowaste, soil and waste - Determination of loss on ignition	AL, MÜ, OP, WA
DIN 18123 2011-04	Soil, investigation and testing - Determination of grain-size distribution	AL
DIN 18134 2012-04	Soil - Testing procedures and testing equipment - Plate load test	BO[i]

Methodenbuch BGK e. V. Section II A1 2006-09	Water content	AL
Methodenbuch BGK e. V. Section II A 3.1 2009-09	Maximum grain size (Modification: *Also organic fertilisers, soil improvers, topsoil and growing media*)	AL
Methodenbuch BGK e. V. Section II A 4 2009-09	Bulk density (Modification: *Also organic fertilisers, soil improvers, topsoil and growing media*)	AL
Methodenbuch BGK e. V. Section II C 2009-09	Unwanted / foreign particles (Modification: *Also organic fertilisers, soil improvers, topsoil and growing media*)	AL
Methodenbuch BGK e. V. Section III C 1 2006-09	pH value	AL
Methodenbuch BGK e. V. Section III C 2 2006-09	Salt content	AL
Methodenbuch BGK e. V. Section IV A 1 2009-09	Degree of decomposition in self-heating test (Modification: *Also organic fertilisers, soil improvers, topsoil and growing media*)	AL

2.4 Non-metals/anions

DIN 38405-D 4 1985-07	Determination of fluoride (Modification for solids: *Analysis from the sodium hydroxide melt digestion*)	AL, OP
DIN 38405-D 27 1992-07	Determination of readily liberated sulphide (Modification for soils: *Addition of sodium hydroxide solution*)	AL, OP
DIN 38405-D 27 2017-10	Determination of sulphide by gas extraction (Modification for soils: *Addition of sodium hydroxide solution*) (Restriction: *AL only dissolved sulphide*)	AL, OP

DIN ISO 17380 2013-10	Soil quality - Determination of total cyanide and easily liberatable cyanide - Continuous flow analysis method	AL, MÜ, OP, RM, WA
DIN EN 16169 2012-11	Sludge, treated biowaste and soil - Determination of Kjeldahl nitrogen	AL
DIN EN 14582 2016-12	Characterisation of waste - Halogen and sulphur content- Oxygen combustion in closed systems and determination methods (Modification: *Only for determination of sulphur, chlorine, fluorine and bromine*)	OP
DIN 4030-2 2008-06	Assessment of water, soil and gases for their aggressiveness to concrete - Part 2: Sampling and analysis of water and soil samples (Restriction: *Here analysis of soil samples*) (Modifications: *Determination of anions by IC,* of *sulphide by photometer*)	AL, HA, OP
DIN 51084 2008-11	Testing of oxidic raw and basic materials for ceramic, glass and glazes - Determination of fluoride content (Restriction: *No distillation*) (Modification for soils: *Digestion with sodium hydroxide solution; absorption and shaking with water, determination with ion-selective electrode*)	OP

2.5 Elements

DIN 38406-E 5 1983-10	Determination of ammonia-nitrogen (Modification for soils and sewage sludge: *Analysis in accordance with Part E 5-2 after distillation*)	AL, OP
DIN EN ISO 12846 (E 12) 2012-08	Water quality - Determination of mercury - Method using atomic absorption spectrometry (AAS) with and without enrichment (Modification: *Also digestion with aqua regia*)	AL, HA, MÜ, OP, RM, WA
DIN EN ISO 11885 (E 22) 2009-09	Water quality - Determination of selected elements by inductively coupled plasma atomic emission spectroscopy (ICP-OES) (Modification for soils: *Digestion with aqua regia extraction solution, calibration of matrix*)	AL, HA, MÜ, OP

DIN EN ISO 17294-2 (E 29) 2017-01	Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (Modification for solids: *Determination in aqua regia extraction solution, compensation of matrix failures*)	AL, HA, MÜ, RM, WA
DIN EN 16170 2017-01	Sludge, treated biowaste and soil - Determination of elements using inductively coupled plasma optical emission spectrometry (ICP-OES)	AL, MÜ, OP
DIN EN 16171 2017-01	Sludge, treated biowaste and soil - Determination of elements using inductively coupled plasma mass spectrometry (ICP-MS)	AL, MÜ, RM, WA
DIN EN 16175-1 2016-12	Sludge, treated biowaste and soil - Determination of mercury - Part 1: Cold-vapour atomic absorption spectrometry (CV-AAS)	AL, HA, MÜ. OP, RM, WA
DIN ISO 16772 2005-06	Soil quality - Determination of mercury in aqua regia soil extracts with cold-vapour atomic spectrometry or cold-vapour atomic fluorescence spectrometry	AL, HA, MÜ, OP, RM, WA
DIN ISO 22036 2009-06	Soil quality - Determination of trace elements in extracts of soil by inductively coupled plasma atomic emission spectrometry (ICP-AES)	AL, HA, MÜ, OP
DIN 19734 1999-01	Soil quality - Determination of chromium(VI) in phosphate extract	AL
VDLUFA Method A 6.2.1.1 2012	Analysis of soil - Determination of phosphorus and potassium in the calcium acetate lactate extract	AL
VDLUFA Method A 6.2.1.2 1991	Analysis of soil - Determination of phosphorus and potassium in double lactate extract	AL
VDLUFA Method A 6.2.4.1 1991	Analysis of soil - Determination of plant-available magnesium in calcium chloride extract	AL

2.6 Summary indices of actions and substances

DIN 38409-H 16 1984-06	Determination of the phenol index (Modification for soils: *Elutriation of samples with distilled water*)	HA

DIN 19539 2016-12	Investigation of solids - Temperature-dependent differentiation of total carbon (TOC_{400}, ROC, TIC_{900})	AL
DIN EN ISO 14402 (H 37) 1999-12	Water quality - Determination of phenol index by flow analysis (FIA and CFA) (Modification for soils: *Elutriation of samples with distilled water and external distillation*)	AL
DIN 38414-S 17 2017-01	Determination of the organically bound halogens amenable to extraction (EOX) (Modification: *Also soils*) (Modification: *MÜ, OP, WA extraction with ultrasound)* (Modification: *AL also extraction with ultrasound*)	AL, MÜ, OP, WA
DIN 38414-S 18 2019-06	Determination of adsorbed organically bound halogens in sludge and sediments (AOX) (Modification: *Also soils*)	AL, HA
DIN EN 13137 (S 30) 2001-12	Characterisation of waste - Determination of total organic carbon (TOC) in waste, sludges and sediments	AL, OP, WA
DIN EN 13639 2017-12	Determination of total organic carbon in limestone	OP
DIN EN 15936 2012-11	Sludge, treated biowaste, soil and waste - Determination of total organic carbon (TOC) by dry combustion (Modification AL: *Method A - Determination of TIC as per DIN 19539 (2016-12)*)	AL, OP, WA
DIN EN 16166 2012-11	Sludge, treated biowaste and soil - Determination of adsorbable organically bound halogens (AOX)	AL, HA
LAGA KW/04 2019-09	Extractable lipophilic substances	AL, MÜ, RM, WA
LAGA EW 98 2017-09	Determination of acid neutralisation capacity	WA
Methodenbuch BGK e. V. Section III A 1 2006-09	Total content of plant nutrients	AL

Methodenbuch BGK e. V. Section III A 2 2006-09	Soluble plant nutrients	AL
Methodenbuch BGK e. V. Section III B 1 2006-09	Organic substances	AL
Methodenbuch BGK e. V. Section III B 2 2006-09	Inorganic chemicals	AL
Methodenbuch BGK e. V. Section III C 4 2006-09	Potential pollutants	AL
Methodenbuch BGK e. V. Section III C 5 2006-09	Organic pollutants (Modification: *PCB and F2 parameters, measurement with GC-MS*)	AL

2.7 Determination of organic contaminants by gas chromatography with conventional detectors (GC-ECD, -FID, -MS)

DIN 38414-S 20 1996-01	Determination of 6 polychlorinated biphenyls (PCB) (Modification for soils: *Also ultrasound extraction of air-dried samples; cleaning on acid and neutral silica gel/benzenesulfonic acid*)	AL, HA, OP, RM
ISO 8165-2 1999-07	Water quality - Determination of selected phenols - Part 2: Method by derivatisation and gas chromatography (Modification: *Derivatisation with acetane hydride*)	MÜ
DIN ISO 14154 2005-12	Soil quality - Determination of some selected chlorophenols - Gas-chromatographic method with electron-capture detection (Modification: *Also phenol, PCP and alkylphenols*)	AL

DIN EN ISO 22155 2016-07	Soil quality - Gas chromatographic determination of volatile aromatic and halogenated hydrocarbons and selected ethers - Static headspace method (Modification for RM: *Also extraction with 2-methoxyethanol*), (Modification for MÜ: *Also naphthalenes, n-alkanes, white spirit*), (Modification for OP: *Also naphthalenes, C5 to C12 alkanes*), (Modification for RM also: *Methods in accordance with HLUG Handbuch Altlasten Volume 7, Part 4*)	AL, HA, MÜ, OP, RM
WES 212 2007-12	Determination of short-chain aliphatic acids in fermentation residues by GC-FID	AL

2.8 Determination of organic contaminants in soils by gas chromatography with conventional detectors (GC-ECD, -FID, -MS)

Flexible scope: AL *, HA *, MÜ *, OP *, RM *

DIN ISO 10382 2003-05	Soil quality - Determination of organochlorine pesticides and polychlorinated biphenyls - Gas chromatographic method with electron capture detection (Restriction: *HA, OP, RM, WA only analysis of polychlorinated biphenyls*)	AL, HA, MÜ, OP, RM, WA
DIN ISO 18287 2006-05	Soil quality - Determination of polycyclic aromatic hydrocarbons (PAHs) - Gas chromatographic method with mass spectrometric detection (GC-MS)	AL, MÜ, OP, WA
DIN EN ISO 16703 2011-09	Soil quality - Determination of content of hydrocarbon in the range C_{10} bis C_{40} by gas chromatography	AL, MÜ, OP, RM, WA
DIN EN ISO 22155 2016-07	Soil quality - Gas chromatographic determination of volatile aromatic and halogenated hydrocarbons and selected ethers - Static headspace method	AL, HA, MÜ, OP, RM
DIN EN ISO 22892 2011-09	Soil quality - Guidelines for the identification of target compounds by gas chromatography and mass spectrometry	AL
DIN EN ISO 23161 2019-04	Soil quality - Determination of selected organotin compounds - Gas chromatographic method	OP

DIN EN 16167 2019-06	Soil, treated biowaste and sludge - Determination of polychlorinated biphenyls (PCB) by gas chromatography with mass selective detection (GC-MS) and gas chromatography with electron-capture detection (GC-ECD)	OP, WA

2.9 Determination of organic contaminants in waste by gas chromatography with conventional detectors (GC-ECD, -FID, -MS)

Flexible scope: AL *, MÜ *, OP *, RM *

DIN EN 14039 2005-01	Characterisation of waste - Determination of hydrocarbon content in the range of C_{10} to C_{40} by gas chromatography	AL, MÜ, OP, RM, WA
DIN EN 15308 2016-12	Characterisation of waste - Determination of selected polychlorinated biphenyls (PCB) in solid waste by using capillary gas chromatography with electron capture or mass spectrometric detection	AL, MÜ, OP, RM, WA
LAGA KW/04 2019-09	Determination of the content of hydrocarbons in waste	AL, MÜ, OP, RM, WA

2.10 Determination of organic parameters in soils, sewage sludge, sludges, sediments, waste, materials for recycling, wood waste and wood

2.10.1 By high-performance liquid chromatography with conventional detectors (HPLC-DAD, -FLD)

DIN EN ISO 22478 (F 21) 2006-07	Water quality - Determination of selected explosives and related compounds - Method using high performance liquid chromatography (HPLC) with UV detection (Modification for soils: *Extraction by shaking with methanol/acetonitrile*)	AL
DIN 38414-S 23 2002-02	Determination of 15 polycyclic aromatic hydrocarbons (PAHs) by high performance liquid chromatography (HPLC) and fluorescence detection	AL, HA, MÜ, OP, RM
DIN ISO 11264 2005-11	Soil quality - Determination of herbicides - Method using HPLC with UV-detection (Modification: *Acidification of sample with trifluoroacetic acid before extraction)*)	AL

DIN ISO 11916-1 2014-11	Soil quality - Determination of selected explosives - Part 1: Method using high-performance liquid chromatography (HPLC) with UV detection	AL
DIN ISO 13877 2000-01	Soil quality - Determination of polynuclear aromatic hydrocarbons - Method using high-performance liquid chromatography	HA, OP
DIN ISO 16000-3 2013-01	Indoor air - Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and in test chambers - Pumped sampling (Modification: *Measurement of solids after extraction with DNPH solution*)	HA

2.10.2 By high performance liquid chromatography with tandem mass spectrometry (HPLC-MS/MS) **

DIN 38414-S 14 2011-08	Determination of selected polyfluorinated compounds (PFC) in sludge, compost and soil - Method using high performance liquid chromatography and mass spectrometric detection (HPLC-MS/MS)	AL
WES 077 2008-08	Perfluorinated carboxylic and sulfonic acids in solids by HPLC-MS/MS)	AL
WES 452 2010-04	Pesticide metabolites in solids; direct injection and measurement by HPLC-MS/MS	AL

3 Analysis of fuels, recovered fuels, biogenic solid fuels and substitute fuels ***

3.1 Sampling

DIN 51701-2 2006-09	Testing of solid fuels - Sampling and sample preparation - Part 2: Sampling	AL, BE, BO, HA, RM, WA

3.2 Sample preparation

DIN EN 13656 2003-01	Characterisation of waste - Microwave assisted digestion with hydrofluoric (HF), nitric (HNO_3) and hydrochloric (HCl) acid mixture for subsequent determination of elements in waste	OP

DIN EN 13657 2003-01	Characterisation of waste - Digestion for subsequent determination of aqua regia soluble portion of elements in waste	OP
DIN EN 14780 2020-02	Solid biofuels - Sample preparation	OP
DIN EN 15002 2015-07	Characterisation of waste - Preparation of test portions from the laboratory sample	OP
DIN EN 15413 2011-11	Solid recovered fuels - Methods for the preparation of the test sample from the laboratory sample	OP
DIN EN 15443 2011-05	Solid recovered fuels - Methods for the preparation of the laboratory sample	OP
DIN 22022-1 2014-07	Solid fuels - Determination of contents of trace elements - Part 1: General rules, sampling and sample preparation - Preparation of samples for the analyses (dissolution method) (Modification: *Also digestion addition of hydrochloric acid and determination of the main elements*)	OP
DIN 51701-3 2006-09	Testing of solid fuels - Sampling and sample preparation - Part 3: Sample preparation	OP
Bundesgütegemeinschaft Sekundärbrennstoffe 2008-10	Sampling - Sample preparation and analysis specification - Determination of humidity, calorific value, chlorine and ash content	OP

3.3 Determination of water content and the moisture of analysis sample

DIN EN ISO 18134-2 2017-05	Solid biofuels - Determination of moisture content - Oven dry method - Part 2: Total moisture - Simplified procedure	OP
DIN EN ISO 18134-3 2015-12	Solid biofuels - Determination of moisture content - Oven dry method - Part 3: Moisture in general analysis sample	OP
E DIN EN ISO 21660-3 2020-01	Solid recovered fuels - Determination of moisture content using the oven dry method - Part 3: Moisture in general analysis sample	OP

DIN CEN/TS 15414-2 Prestandard 2010-10	Solid recovered fuels - Determination of moisture content using the oven dry method - Part 2: Determination of total moisture by a simplified method	OP
DIN EN 15414-3 2011-05	Solid recovered fuels - Determination of moisture content using the oven dry method - Part 3: Moisture in general analysis sample	OP
DIN 51718 2002-06	Testing of solid fuels - Determination of the water content and the moisture of analysis sample	OP

3.4 Determination of gross and net calorific value

E DIN EN ISO 21654 2020-01	Solid recovered fuels - Determination of gross calorific value	OP
DIN CEN/TS 16023 2014-03	Characterisation of waste - Determination of gross calorific value and calculation of net calorific value	OP
DIN EN ISO 18125 2017-08	Solid biofuels - Determination of calorific value	OP
DIN EN 15170 2009-05	Characterization of sludges - Determination of calorific value	OP
DIN EN 15400 2011-05	Solid recovered fuels - Determination of gross calorific value	OP
DIN 51900-1 2000-04 Corrigendum 1 2004-02	Testing of solid and liquid fuels - Determination of gross calorific value by the bomb calorimeter and calculation of net calorific value - Part 1: General principles, apparatus, methods	OP
DIN 51900-2 2003-05	Testing of solid and liquid fuels - Determination of gross calorific value by the bomb calorimeter and calculation of net calorific value - Part 2: Method using isoperibol or static jacket calorimeter	OP
DIN 51900-3 2005-01	Testing of solid and liquid fuels - Determination of gross calorific value by the bomb calorimeter and calculation of net calorific value - Part 3: Method using adiabatic jacket	OP

3.5 Determination of ash content

DIN EN ISO 18122 2016-03	Solid biofuels - Determination of ash content	OP
E DIN EN ISO 21656 2020-01	Solid recovered fuels - Determination of ash content	OP
DIN EN 15403 2011-05	Solid recovered fuels - Determination of ash content	OP
DIN 51719 1997-07	Testing of solid fuels - Determination of ash content	OP

3.6 Determination of volatile components

DIN EN ISO 18123 2016-03	Solid biofuels - Determination of the content of volatile matter	OP
DIN EN 15402 2011-05	Solid recovered fuels - Determination of the content of volatile matter	OP
DIN 51720 2001-03	Testing of solid fuels - Determination of volatile matter content	OP

3.7 Determination of sulphur and halogens

DIN EN ISO 16995 2015-05	Solid biofuels - Determination of the water soluble chloride, sodium and potassium content (Restriction: *Without sodium and potassium*)	OP
DIN EN ISO 16994 2016-12	Solid biofuels - Determination of total content of sulphur and chlorine (Modification: *Also determination of chlorine by potentiometry*)	OP
DIN EN 14582 2016-12	Characterisation of waste - Halogen and sulphur content- Oxygen combustion in closed systems and determination methods (Modification: *Only for determination of sulphur, chlorine, fluorine and bromine*)	OP

DIN EN 15408 2011-05	Solid recovered fuels - Methods for determination of sulphur (S), chlorine (Cl), fluorine (F) and bromine (Br) content	OP
DIN 51723 2002-06	Testing of solid fuels - Determination of chlorine content (method B)	OP
DIN 51727 2011-11	Testing of solid fuels - Determination of chlorine content (Restriction: *Here only method B bomb digestion*)	OP

3.8 Determination of elements

DIN EN ISO 16967 2015-07	Solid biofuels - Determination of major elements - Al, Ca, Fe, Mg, P, K, Si, Na and Ti	OP
DIN EN 15410 2011-11	Solid recovered fuels - Method for the determination of the content of major elements (Al, Ca, Fe, K, Mg, Na, P, Si, Ti)	OP
DIN EN 15411 2011-11	Solid secondary fuels - Methods for the determination of the content of trace elements (As, Ba, Be, Cd, Co, Cr, Cu, Mo, Mn, Ni, Pb, Sb, Se, Tl, V und Zn)	OP
DIN 22022-2 2001-02	Solid fuels - Determination of contents of trace elements - Part 2: ICP-OES	OP
DIN 22022-4 2001-02	Solid fuels - Determination of contents of trace elements - Part 4: Atomic absorption spectrometry applying the flameless hydride system or the cold-vapour-method	OP
DIN 22022-6 2001-12	Solid fuels - Determination of contents of trace elements - Part 6: Evaluation and declaration of results	OP
EPA 7473 2007-02	Mercury in solids and solutions by thermal decomposition, amalgamation and atomic absorption spectrophotometry	OP

3.9 Determination of total content of carbon, hydrogen and nitrogen

DIN EN ISO 16948 2015-09	Solid biofuels - Determination of total content of carbon, hydrogen and nitrogen	OP
E DIN EN ISO 21663 2020-02	Solid recovered fuels - Methods for the determination of carbon (C), hydrogen (H), nitrogen (N) and sulphur (S) by the instrumental method	OP
DIN EN 15407 2011-05	Solid recovered fuels - Methods for the determination of carbon (C), hydrogen (H) and nitrogen (N) content	OP
DIN 51732 2014-07	Testing of solid fuels - Determination of total carbon, hydrogen and nitrogen - Instrumental methods	OP

3.10 Determination of biomass

E DIN EN ISO 21644 2020-02	Solid recovered fuels - Methods for the determination of biomass content (Restriction: Only Annex B)	OP
DIN 15440 2011-05 Corrigendum 1 2012-10	Solid recovered fuels - Methods for the determination of biomass content Annex A: Determination of biomass content using the selective dissolution method Annex D: Determination of biomass content as a percentage of the energy content (calorific value) Annex E: Determination of total carbon content of biomass and non-biomass fraction by selective dissolution	OP
Regulation 601/2012 / EU Article 36 Paragraph 3 2012-06	COMMISSION REGULATION (EU) No 601/2012 of 21 June 2012 on the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC of the European Parliament and of the Council	OP

4 Analysis of mineral oils and mineral oil products ***

DIN EN 12766-1 2000-11	Petroleum products and used oils - Determination of PCBs and related products - Part 1: Separation and determination of selected PCB congeners by gas chromatography (GC) using an electron capture detector (ECD)	OP
DIN EN 12766-2 2001-12	Petroleum products and used oils - Determination of PCBs and related products - Part 2: Calculation of polychlorinated biphenyl (PCB)	OP
DIN 51750-1 1990-12	Sampling of petroleum products; general information	AL, BE, BO, HA, WA
DIN 51750-2 1990-12	Sampling of liquid petroleum products	AL, BE, BO, HA, WA
DIN 51777 2020-04	Petroleum products - Determination of water content using titration according to Karl Fischer	OP
AltölV Annex 2 2002-04	Sampling and analysis of waste oil	AL, BE, BO, HA, WA

5 Analysis of elements in soils, sediments, wastes, materials for recycling, and fuels using X-ray fluorescence analysis (XRF) ***

DIN 19747 2009-07	Investigation of solids - Pretreatment, preparation and processing of samples for chemical, biological and physical investigations	BO
DIN 51729-10 2011-04	Testing of solid fuels - Determination of chemical composition of fuel ash - Part 10: X-ray fluorescence analysis	BO
DIN EN 196-2 2013-10	Methods of testing cement - Part 2: Chemical analysis of cement (Modification: *Determination by RFA,* *(Restriction: Without bromine and chlorine*)	BO
DIN EN 15309 2007-08	Characterisation of waste and soil - Determination of elemental composition using X-ray fluorescence analysis (Restriction: *Without cobalt, selenium, silver, tellurium, thallium, tungsten*)	BO

6 Test methods in accordance with the Drinking Water Ordinance - TrinkwV - ***

Sampling

Method	Title	Location
DIN EN ISO 5667-1 (A 4) 2007-04	Water quality - Sampling - Part 1: Guidance on the design of sampling programmes and sampling techniques	AL, BE, BO, BR, DR, HA, HH, MA, MÜ, OP, RM, WA
DIN ISO 5667-5 (A 14) 2011-02	Water quality - Sampling - Part 5: Guidance on sampling of drinking water from treatment works and piped distribution systems	AL, BE, BO, BR, DR, HA, MA, MÜ, OP, RM, WA
DIN EN ISO 5667-3 (A 21) 2019-07	Water quality - Sampling - Part 3: Preservation and handling of water samples	
DIN EN ISO 19458 (K 19) 2006-12	Water quality - Sampling for microbiological analysis	AL, BE, BO, BR, DR, HA, HH, MA, MÜ, OP, RM, WA
Recommendation of the Federal Environment Agency 18 December 2018	Assessment of the quality of drinking water with respect to the parameters lead, copper and nickel	AL, BE, BO, BR, DR, HA, MA, OP, RM, WA

ANNEX 1: MICROBIOLOGICAL PARAMETERS

PART I: General requirements for drinking water

No.	Parameter	Method	Location
1	Escherichia coli (E. coli)	DIN EN ISO 9308-1 (K 12) 2017-09	AL, OP, WA
		DIN EN ISO 9308-2 (K 6-1) 2014-06	OP, WA
2	Enterococci	DIN EN ISO 7899-2 (K 15) 2000-11	AL, OP, WA

PART II: Requirements for drinking water intended for transfer in sealed containers

No.	Parameter	Method	Location
1	Escherichia coli (E. coli)	DIN EN ISO 9308-1 (K 12) 2017-09	AL, OP, WA
2	Enterococci	DIN EN ISO 7899-2 (K 15) 2000-11	AL, OP, WA
3	Pseudomonas aeruginosa	DIN EN ISO 16266 (K 11) 2008-05	AL, OP, WA

ANNEX 2: CHEMICAL PARAMETERS

PART I: Chemical parameters whose concentration does not usually increase in the distribution network, including the drinking water installation

No.	Parameter	Method	Location
1	Acrylamide	DIN 38413-P 6 2007-02	AL
2	Benzene	DIN 38407-F 43 2014-10	AL, HA, MÜ, OP, RM

No.	Parameter	Method	Location
3	Boron	DIN EN ISO 11885 (E 22) 2009-09	HA
		DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
4	Bromate	DIN EN ISO 15061 (D 34) 2001-12	AL, RM
5	Chromium	DIN EN ISO 11885 (E 22) 2009-09	HA
		DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
6	Cyanide	DIN EN ISO 14403-2 (D 3) 2012-10	AL, HA, MÜ, OP, RM
7	1,2-dichloroethane	DIN 38407-F 43 2014-10	AL, HA, MÜ, OP, RM
8	Fluoride	DIN EN ISO 10304-1 (D 20) 2009-07	AL, HA, MÜ, OP, RM
9	Nitrate	DIN EN ISO 10304-1 (D 20) 2009-07	AL, HA, MÜ, OP, RM
10	Plant protection product active ingredients and biocidal product active ingredients	DIN EN ISO 6468 (F 1) 1997-02	AL
		DIN 38407-F 2 1993-02	
		DIN 38407-F 35 2010-10	
		DIN EN ISO 10695 (F 6) 2000-11	
		DIN 38407-F 36 2014-09	
		DIN EN 12918 (F 24) 1999-11	
		WES 735 2013-11	
		WES 1185 2019-08	
		WES 1346 2020-12	
		DIN 38407-F 22 2001-10	MÜ
11	Plant protection product active ingredients and biocidal product active ingredients total	DIN EN ISO 6468 (F 1) 1997-02	AL
		DIN 38407-F 2 1993-02	
		DIN 38407-F 35 2010-10	
		DIN EN ISO 10695 (F 6) 2000-11	
		DIN 38407-F 36 2014-09	
		DIN EN 12918 (F 24) 1999-11	
		WES 735 2013-11	
		WES 1185 2019-08	
		WES 1346 2020-12	
		DIN 38407-F 22 2001-10	MÜ
12	Mercury	DIN EN 12846 (E 12) 2012-08	AL, HA, MÜ, OP
		DIN EN ISO 17294-2 (E 29) 2017-01	HA, RM
13	Selenium	DIN EN ISO 11885 (E 22) 2009-09	HA
		DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
14	Tetrachloroethene and trichloroethylene	DIN 38407-F 43 2014-10	AL, HA, MÜ, OP, RM
15	Uranium	DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM

PART II: Chemical parameters whose concentration may increase in the distribution network, including the drinking water installation

No.	Parameter	Method	Location
1	Antimony	DIN EN ISO 11885 (E 22) 2009-09	HA
		DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
2	Arsenic	DIN EN ISO 11885 (E 22) 2009-09	HA
		DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
3	Benzo[a]pyrene	DIN EN ISO 17993 (F 18) 2004-03	AL, HA, RM
		DIN 38407-F 39 2011-09	AL, HA
4	Lead	DIN EN ISO 11885 (E 22) 2009-09	HA
		DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
5	Cadmium	DIN EN ISO 11885 (E 22) 2009-09	HA
		DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
6	Epichlorohydrin	DIN EN 14207 (P 9) 2003-09	AL
7	Copper	DIN EN ISO 11885 (E 22) 2009-09	HA
		DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
8	Nickel	DIN EN ISO 11885 (E 22) 2009-09	HA
		DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
9	Nitrite	DIN EN 26777 (D 10) 1993-04	AL, HA, MÜ, OP
		DIN EN ISO 10304-1 (D 20) 2009-07	HA
10	Polycyclic aromatic hydrocarbons (PAH)	DIN EN ISO 17993 (F 18) 2004-03	AL, HA, RM
		DIN 38407-F 39 2011-09	AL, HA
11	Trihalomethanes (THM)	DIN 38407-F 43 2014-10	AL, HA, MÜ, OP, RM
12	Vinyl chloride	DIN 38407-F 43 2014-10	AL, HA, RM

ANNEX 3: INDICATOR PARAMETERS

Part I: General indicator parameters

No.	Parameter	Method	Location
1	Aluminium	DIN EN ISO 11885 (E 22) 2009-09	HA
		DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
2	Ammonium	DIN 38406-E 5 1983-10	AL, HA, MÜ
		DIN EN ISO 11732 (E 23) 2005-05	HA, OP
3	Chloride	DIN EN ISO 10304-1 (D 20) 2009-07	AL, HA, MÜ, OP, RM
4	Clostridium perfringens (including spores)	DIN EN ISO 14189 (K 24) 2016-11	AL, OP, WA
5	Coliform bacteria	DIN EN ISO 9308-1 (K 12) 2017-09	AL, OP, WA
6	Iron	DIN EN ISO 11885 (E 22) 2009-09	HA
		DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM

No.	Parameter	Method	Location
7	Colouring (spectral absorption coefficient Hg 436 nm)	DIN EN ISO 7887 (C 1) Method A 2012-04	AL, BE, BO, BR, DR, HA, HH, MA, MÜ, OP, RM, WA
		DIN EN ISO 7887 (C 1) 2012-04	AL, HA, MÜ, OP
8	Odour (as TON)	DIN EN 1622 (B 3) 2006-10	AL, HA
		DIN EN 1622 (B 3) 2006-10 (Annex C)	AL, BE, BO, BR, DR, HA, HH, MA, MÜ, OP, RM, WA
9	Taste	DIN EN 1622 (B 3) Annex C 2006-10	AL, BE, BO, BR, DR, HA, HH, MÜ, OP, RM, WA
10	Colony count at 22 °C	DIN EN ISO 6222 (K 5) 1999-07	AL, OP, WA
		TrinkwV Section 15 (1c)	AL, OP, WA
11	Colony count at 36 °C	DIN EN ISO 6222 (K 5) 1999-07	AL, OP, WA
		TrinkwV Section 15 (1c)	AL, OP, WA
12	Electrical conductivity	DIN EN 27888 (C 8) 1993-11	AL, BE, BO, BR, DR, HA, MA, MÜ, OP, RM, WA
13	Manganese	DIN EN ISO 11885 (E 22) 2009-09	HA
		DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
14	Sodium	DIN EN ISO 11885 (E 22) 2009-09	HA
		DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
15	Organically bound carbon (TOC)	DIN EN 1484 (H 3) 2019-04	AL, HA, MÜ, OP, RM
16	Oxidisability	DIN EN ISO 8467 (H 5) 1995-05	AL, HA, MÜ, OP
17	Sulphate	DIN EN ISO 10304-1 (D 20) 2009-07	AL, HA, MÜ, OP, RM
18	Turbidity	DIN EN ISO 7027-1 (C 21) 2016-11	AL, BE, BO, BR, DR, HA, MA, MÜ OP, RM, WA
19	Hydrogen ion concentration	DIN EN ISO 10523 (C 5) 2012-04	AL, BE, BO, BR, DR, HA, MA, MÜ OP, RM, WA
20	Calcite dissolving capacity	DIN 38404-C 10 2012-12	AL, HA, OP

Part II: Specific requirements for drinking water in systems in the drinking water installation

Parameter	Method	Location
Legionella spec.	ISO 11731 2017-05 UBA recommendation 18 December 2018	AL, OP, WA

ANNEX 3a: Requirements for drinking water with regard to radioactive substances

Not used

Parameters not included in Annexes 1 to 3 of the German Drinking Water Ordinance

Additional periodic testing

Parameter	Method	Location
Calcium	DIN EN ISO 11885 (E 22) 2009-09	HA
	DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
Potassium	DIN EN ISO 11885 (E 22) 2009-09	HA
	DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
Magnesium	DIN EN ISO 11885 (E 22) 2009-09	HA
	DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM
Acid and base capacity	DIN 38409-H 7 2005-12	AL, HA, MÜ, OP
Phosphate	DIN EN ISO 6878 2004-09 (D11)	AL, HA, OP
	DIN EN ISO 11885 (E 22) 2009-09	HA
	DIN EN ISO 17294-2 (E 29) 2017-01	AL, HA, RM

The accreditation does not replace the recognition or approval procedure of the competent authority pursuant to Section 15 (4) TrinkwV.

7 List of test methods for the specialist module for WATER

Revised: LAWA of 18.10.2018

Section 1: Sampling and general parameters

Parameter	Method	Was	Sur	Raw	Location
Sampling of waste water	**DIN 38402-A 11: 2009-02**	☒			AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Sampling from running waters	DIN EN ISO 5667-6: 2016-12 (A 15)		☒		AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Sampling from aquifers	DIN 38402-A 13: 1985-12			☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA

Parameter	Method	Was	Sur	Raw	Location
Sampling from barrages and lakes	DIN 38402-A 12: 1985-06		☒		AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Homogenisation of samples	**DIN 38402-A 30: 1998-07**	☒	☒		AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Temperature	DIN 38404-C 4: 1976-12	☒	☒	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
pH value	**DIN EN ISO 10523: 2012-04 (C 5)**	☒	☒	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Conductivity (25 °C)	DIN EN 27888: 1993-11 (C 8)	☒	☒	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Odour	DIN EN 1622: 2006-10 (B 3) Annex C	☒	☒	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Colouring	DIN EN ISO 7887: 2012-04 (C 1), Method A	☒	☒	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Turbidity	DIN EN ISO 7027: 2000-04 (C 2)	☒	☒	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Oxygen	DIN EN ISO 5814: 2013-03 (G 22)		☒	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
	DIN ISO 17289: 2014-12 (G 25)		☒	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
	DIN EN 25813: 1993-01 (G 21)		☐	☐	
Redox potential	**DIN 38404-C 6: 1984-05**	☒		☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA

Section 2: Photometry, ion chromatography, titrimetry

Parameter	Method	Was	Sur	Raw	Location
Absorption at 254 nm (SAC 254)	DIN 38404-C 3: 2005-07		☒	☒	AL, HA, MÜ, OP
Absorption at 436 nm (SAC 436)	DIN EN ISO 7887: 2012-04 (C 1), Method B	☒	☒	☒	AL, HA, MÜ, OP
Ammonium nitrogen	**DIN EN ISO 11732: 2005-05 (E 23)**	☒	☒	☒	HA, OP
	DIN 38406-E 5: 1983-10	☒	☒	☒	AL, HA, MÜ, OP
	DIN EN ISO 14911: 1999-12 (E 34)		☐	☐	
	DIN ISO 15923-1: 2014-07 (D 49)	☐	☐	☐	
Nitrite nitrogen	**DIN EN 26777: 1993-04 (D 10)**	☒	☒	☒	AL, HA, MÜ, OP
	DIN EN ISO 10304-1: 2009-07 (D 20)	☒	☒	☒	RM
	DIN EN ISO 13395: 1996-12 (D 28)	☐	☐	☐	
	DIN ISO 15923-1: 2014-07 (D 49)	☐	☐	☐	
Nitrate nitrogen	**DIN EN ISO 10304-1: 2009-07 (D 20)**	☒	☒	☒	AL, HA, MÜ, OP, RM
	DIN EN ISO 13395: 1996-12 (D 28)	☐	☐	☐	
	DIN 38405-D 9: 2011-09	☐	☐	☐	
	DIN 38405-D 29: 1994-11		☐	☐	
	DIN ISO 15923-1: 2014-07 (D 49)	☐	☐	☐	
Phosphorus, total *(see also section 3)*	**DIN EN ISO 6878: 2004-09 (D 11)**	☒	☒	☒	AL, HA
	DIN EN ISO 15681-1: 2005-05 (D 45)	☐	☐	☐	
	DIN EN ISO 15681-2: 2005-05 (D 46)	☐	☐	☐	
Orthophosphate	DIN EN ISO 10304-1: 2009-07 (D 20)		☒	☒	HA
	DIN EN ISO 6878: 2004-09 (D 11)		☒	☒	AL, HA, OP
	DIN EN ISO 15681-1: 2004-07 (D 45)		☐	☐	
	DIN EN ISO 15681-2: 2005-05 (D 46)		☒	☒	HA
	DIN ISO 15923-1: 2014-07 (D 49)		☐	☐	

Parameter	Method	Was	Sur	Raw	Location
Fluoride (dissolved)	**DIN 38405-D 4-1, 1985-07**	☒	☒	☒	AL, MÜ, OP
	DIN EN ISO 10304-1: 2009-07 (D 20)	☒	☒	☒	AL, HA, MÜ, OP, RM
Chloride	**DIN EN ISO 10304-1: 2009-07 (D 20)**	☒	☒	☒	AL, HA, MÜ, OP, RM
	DIN EN ISO 15682: 2002-01 (D 31)	☐	☐	☐	
	DIN ISO 15923-1: 2014-07 (D 49)	☐	☐	☐	
	DIN EN ISO 10304-4: 1999-07 (D 25)			☐	
	DIN 38405-D 1-1 und D 1-2: 1985-12	☐	☐	☐	
	DIN 38405-D 1-3 und D 1-4: 1985-12		☐	☐	
Sulphate	**DIN EN ISO 10304-1: 2009-07 (D 20)**	☒	☒	☒	AL, HA, MÜ, OP, RM
	DIN 38405-D 5-1: 1985-01		☐	☐	
	DIN 38405 D 5-2:1985-01	☐	☐	☐	
	DIN ISO 15923-1: 2014-07 (D 49)	☐	☐	☐	
Cyanide (readily liberated)	**DIN 38405-D 13-2: 1981-02**	☒	☒	☒	AL
	DIN EN ISO 14403-1: 2012-10 (D 2)	☐	☐	☐	
	DIN EN ISO 14403-2: 2012-10 (D 3)	☒	☒	☒	AL, HA, MÜ, OP, RM
	DIN 38405-D 7: 2002-04		☐	☐	
Cyanide (total)	**DIN 38405-D 13-1: 1981-02**	☐	☐	☐	
	DIN EN ISO 14403-1: 2012-10 (D 2)	☐	☐	☐	
	DIN EN ISO 14403-2: 2012-10 (D 3)	☒	☒	☒	AL, HA, MÜ, OP, RM
	DIN 38405-D 7: 2002-04		☐	☐	
Chromium(VI)	**DIN 38405-D 24: 1987-05**	☒	☒	☒	AL, HA, MÜ, OP
	DIN EN ISO 10304-3: 1997-11 (D 22), Section 6 (dissolved chromate)	☐	☐	☐	
	DIN EN ISO 23913: 2009-09 (D 41)	☐	☐	☐	
	DIN EN ISO 18412: 2007-02 (D 40)			☐	

Parameter	Method	Was	Sur	Raw	Location
Sulphide (readily liberated)	**DIN 38405-D 27: 1992-07**	☒	☒	☒	AL, HA, OP

Section 3: Elemental analysis

Parameter	Method	Was	Sur	Raw	Location
Aluminium	**DIN EN ISO 11885: 2009-09 (E 22)**	☒	☒	☒	AL, HA, MÜ, OP
	DIN EN ISO 12020: 2000-05 (E 25)	☐	☐	☐	
	DIN EN ISO 17294-2: 2017-01 (E 29)	☒	☒	☒	AL, HA, MÜ, RM
	DIN EN ISO 15586: 2004-02 (E 4)		☐	☐	
Arsenic	**DIN EN ISO 11969: 1996-11 (D 18)**	☐	☐	☐	
	DIN EN ISO 11885: 2009-09 (E 22)	☒			AL, HA, MÜ, OP
	DIN EN ISO 17294-2: 2017-01 (E 29)	☒	☒	☒	AL, HA, MÜ, RM
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐	
	DIN 38405-D 35: 2004-09	☐	☐	☐	
Lead	**DIN EN ISO 11885: 2009-09 (E 22)**	☒			AL, HA, MÜ, OP
	DIN 38406-E 6: 1998-07	☐	☐	☐	
	DIN EN ISO 17294-2: 2017-01 (E 29)	☒	☒	☒	AL, HA, MÜ, RM
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐	
Cadmium	**DIN EN ISO 11885: 2009-09 (E 22)**	☒			AL, HA, MÜ, OP
	DIN EN ISO 5961: 1995-05 (E 19)	☐	☐	☐	
	DIN EN ISO 17294-2: 2017-01 (E 29)	☒	☒	☒	AL, HA, MÜ, RM
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐	

Parameter	Method	Was	Sur	Raw	Location
Calcium	DIN EN ISO 11885: 2009-09 (E 22)		☒	☒	AL, HA, MÜ, OP
	DIN 38406-E 3: 2002-03		☐	☐	
	DIN EN ISO 7980: 2000-07 (E 3a)		☐	☐	
	DIN EN ISO 17294-2: 2017-01 (E 29)		☒	☒	AL, HA, MÜ, RM
	DIN EN ISO 14911: 1999-12 (E 34)		☐	☐	
Chromium	**DIN EN ISO 11885: 2009-09 (E 22)**	☒	☒	☒	AL, HA, MÜ, OP
	DIN EN 1233: 1996-08 (E 10)	☐	☐	☐	
	DIN EN ISO 17294-2: 2017-01 (E 29)	☒	☒	☒	AL, HA, MÜ, RM
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐	
Iron	**DIN EN ISO 11885: 2009-09 (E 22)**	☒	☒	☒	AL, HA, MÜ, OP
	DIN 38406-E 32: 2000-05	☐	☐	☐	
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐	
	DIN EN ISO 17294-2: 2017-01 (E 29)	☒	☒	☒	AL, HA, MÜ, RM
Potassium	DIN 38406-E 13: 1992-07		☐	☐	
	DIN EN ISO 11885: 2009-09 (E 22)		☒	☒	AL, HA, MÜ, OP
	DIN EN ISO 17294-2: 2017-01 (E 29)		☒	☒	AL, HA, MÜ, RM
	DIN EN ISO 14911: 1999-12 (E 34)		☐	☐	
Copper	**DIN EN ISO 11885: 2009-09 (E 22)**	☒	☒	☒	AL, HA, MÜ, OP
	DIN 38406-E 7: 1991-09	☐	☐	☐	
	DIN EN ISO 17294-2: 2017-01 (E 29)	☒	☒	☒	AL, HA, MÜ, RM
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐	

Parameter	Method	Was	Sur	Raw	Location
Manganese	DIN EN ISO 11885: 2009-09 (E 22)			☒	AL, HA, MÜ, OP
	DIN EN ISO 17294-2: 2017-01 (E 29)			☒	AL, HA, MÜ, RM
	DIN 38406-E 33: 2000-06			☐	
	DIN EN ISO 15586: 2004-02 (E 4)			☐	
	DIN EN ISO 14911: 1999-12 (E 34)			☐	
Sodium	DIN 38406-E 14: 1992-07		☐	☐	
	DIN EN ISO 11885: 2009-09 (E 22)		☒	☒	AL, HA, MÜ, OP
	DIN EN ISO 17294-2: 2017-01 (E 29)		☒	☒	AL, HA, MÜ, RM
	DIN EN ISO 14911: 1999-12 (E 34)		☐	☐	
Nickel	**DIN EN ISO 11885: 2009-09 (E 22)**	☒	☒	☒	AL, HA, MÜ, OP
	DIN 38406-E 11: 1991-09	☐	☐	☐	
	DIN EN ISO 17294-2: 2017-01 (E 29)	☒	☒	☒	AL, HA, MÜ, RM
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐	
Mercury	**DIN EN ISO17852: 2008-04 (E 35)**	☐	☐	☐	
	DIN EN ISO 12846: 2012-08 (E 12)	☒	☒	☒	AL, HA, MÜ, OP, RM
Zinc	**DIN EN ISO 11885: 2009-09 (E 22)**	☒	☒	☒	AL, HA, MÜ, OP
	DIN 38406-E 8: 2004-10	☐	☐	☐	
	DIN EN ISO 17294-2: 2017-01 (E 29)	☒	☒	☒	AL, HA, MÜ, RM
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐	
Boron	**DIN EN ISO 11885: 2009-09 (E 22)**	☒	☒	☒	AL, HA, MÜ, OP
	DIN EN ISO 17294-2: 2017-01 (E 29)	☒	☒	☒	AL, HA, MÜ, RM

Parameter	Method	Was	Sur	Raw	Location
Magnesium	DIN EN ISO 11885: 2009-09 (E 22)		☒	☒	AL, HA, MÜ, OP
	DIN 38406-E 3: 2002-03		☐	☐	
	DIN EN ISO 7980: 2000-07 (E 3a)		☐	☐	
	DIN EN ISO 17294-2: 2017-01 (E 29)		☒	☒	AL, HA, MÜ, RM
	DIN EN ISO 14911: 1999-12 (E 34)		☐	☐	
Phosphorus, total *(see also section 2)*	**DIN EN ISO 11885: 2009-09 (E 22)**	☒	☒	☒	AL, HA, MÜ, OP
	DIN EN ISO 17294-2: 2017-01 (E 29)	☒	☒	☒	AL, HA, MÜ, RM

Section 4/5: Group and sum parameters

Parameter	Method	Was	Sur	Raw	Location
Biological oxygen demand (BOD_5)	**DIN EN 1899-1: 1998-05 (H 51)**	☒			AL
	DIN EN 1899-2: 1998-05 (H 52)		☒		AL
Chemical oxygen demand (COD)	**DIN 38409-H 41: 1980-12**	☒			AL, HA
	DIN 38409-H 44: 1992-05		☐		
	DIN ISO 15705: 2003-01 (H 45)		☒		AL, OP
Phenol index	**DIN 38409-H 16-2: 1984-06**	☒	☒	☒	HA
	DIN 38409-H 16-1: 1984-06		☒	☒	HA
	DIN EN ISO 14402: 1999-12 (H 37) Method as per section 4	☒	☒	☒	AL, MÜ, OP, RM
Filterable solids	**DIN EN 872: 2005-04 (H 33)**	☒	☒		AL, HA, OP
	DIN 38409-H 2-3: 1987-03		☒		AL, HA, OP
Acid and base capacity	DIN 38409-H 7: 2005-12		☒	☒	AL, HA, MÜ, OP
Total organic carbon (TOC)	**DIN EN 1484: 1997-08 (H 3)**	☒	☒	☒	AL, HA, MÜ, OP, RM
Dissolved organic carbon (DOC)	DIN EN 1484: 1997-08 (H 3)		☒	☒	AL, HA, MÜ, OP, RM

Parameter	Method	Was	Sur	Raw	Location
Total bound nitrogen (TN_b)	**DIN EN 12260: 2003-12 (H 34)**	☒	☒	☒	HA, OP
	DIN EN ISO 11905-1: 1998-08 (H 36)	☐	☐	☐	
Adsorbable organic halogens (AOX)	**DIN EN ISO 9562: 2005-02 (H 14)**	☒	☒	☒	AL, HA

Section 6: Gas chromatographic methods

Parameter	Method	Was	Sur	Raw	Location
Volatile halogenated hydrocarbons (VOC)	**DIN EN ISO 10301: 1997-08 (F 4)***	☒	☒	☒	AL, HA, MÜ, OP, RM
	DIN 38407-F 43: 2014-10	☒	☒	☒	AL, HA, MÜ, OP, RM
	DIN EN ISO 15680: 2004-04 (F 19)	☐	☐	☐	
	DIN EN ISO 17943: 2016-11 (F 41)		☐	☐	
Benzene and derivatives (BTEX)	**DIN 38407-F 9: 1991-05***	☒	☒	☒	AL, HA, MÜ, OP, RM
	DIN 38407-F 43: 2014-10	☒	☒	☒	AL, HA, MÜ, OP, RM
	DIN EN ISO 15680: 2004-04 (F 19)	☐	☐	☐	
	DIN EN ISO 17943: 2016-11 (F 41)		☐	☐	
Organochlorine insecticides (OCP)	DIN EN ISO 6468: 1997-02 (F 1)*		☒	☒	AL
	DIN 38407-F 37: 2013-11		☐	☐	
	DIN EN 16693: 2015-12 (F 51)		☐	☐	
Polychlorinated biphenyls (PCB)	DIN EN ISO 6468: 1997-02 (F 1)*		☒	☒	AL
	DIN 38407-F 3: 1998-07		☒	☒	AL, HA, RM
	DIN 38407-F 37: 2013-11		☐	☐	
Mono, dichlorobenzenes	DIN EN ISO 15680: 2004-04 (F 19)		☐	☐	
	DIN 38407-F 43: 2014-10		☒	☒	AL, HA, MÜ, OP, RM

Parameter	Method	Was	Sur	Raw	Location
Tri to hexachlorobenzene	**DIN EN ISO 6468: 1997-02 (F 1)***	☒	☒	☒	AL
	DIN 38407-F 2: 1993-02	☒	☒	☒	AL
	DIN EN ISO 15680 (F19):2004-04**	☐	☐	☐	
	DIN 38407-F 43: 2014-10**	☐	☐	☐	
	DIN 38407-F 37: 2013-11	☐	☐	☐	
	DIN EN 16693: 2015-12 (F 51)***		☐	☐	
Chlorophenols	DIN EN 12673: 1999-05 (F 15)		☒	☒	AL
Organophosphorus and organic nitrogen compounds	DIN EN ISO 10695: 2000-11 (F 6) *		☒	☒	AL
Polycyclic aromatic hydrocarbons (PAH) *(see also section 7)*	**DIN 38407-F 39: 2011-09**	☒	☒	☒	AL, HA
	DIN ISO 28540: 2014-05 (F 40)	☐	☐	☐	
	DIN EN 16691: 2015-12 (F 50)		☐	☐	
Hydrocarbon index	**DIN EN ISO 9377-2: 2001-07 (H 53)**	☒	☒	☒	AL, HA, MÜ, OP, RM

* Mass spectrometric detection allowed
** Only applicable to trichlorobenzene
*** Only applicable to hexachlorobenzene

Section 7: HPLC methods

Parameter	Method	Was	Sur	Raw	Location
Polycyclic aromatic hydrocarbons (PAH)* *(see also section 6)*	**DIN EN ISO 17993: 2004-03 (F 18)**	☒	☒	☒	AL, HA, MÜ, OP, RM
Plant protection products and pesticides (PPP) *(The methods should be applied according to substance-specific requirements.)*	DIN EN ISO 11369: 1997-11 (F 12)*		☐	☐	
	DIN 38407-F 35: 2010-10		☒	☒	AL
	DIN 38407-F 36: 2014-09		☒	☒	AL

* Mass spectrometric detection allowed

Section 8: Microbiological methods (not used)

Section 9.1: Biological methods, bio-assays (part 1)

Parameter	Method	Was	Sur	Raw	Location
Fish egg test	**DIN EN ISO 15088: 2009-08 (T 6)**	☒			AL
Luminescent bacteria inhibition test	**DIN EN ISO 11348-1: 2009-05 (L 51)**	☐			
	DIN EN ISO 11348-2: 2009-05 (L 52)	☒			AL

Section 9.2: Biological methods, bio-assays (part 2)

Parameter	Method	Was	Sur	Raw	Location
Saprobic index	DIN 38410-M 1: 2004-10		☐		
Chlorophyll a	DIN 38412-L 16: 1985-12		☒		AL
Phaeophytin	DIN 38416-L 16: 1985-12		☒		AL
Daphnia test	**DIN 38412-L 30: 1989-03**	☒			AL
Algae test	**DIN 38412-L 33: 1991-03**	☐			
Umu test	**DIN 38415-T 3: 1996-12**	☐			

8 Sampling and microbiological analysis of industrial water in accordance with Section 3 (8) 42nd BImSchV ***

Sampling

Method	Title	Location
DIN EN ISO 19458 (K 19) 2006-12	Water quality - Sampling for microbiological analysis	AL, BE, BO, BR, DR, HA, HH, MA, MÜ, OP, RM, WA
	Recommendation of the Federal Environmental Agency for the sampling and detection of Legionella in evaporative cooling plants, cooling towers and wet separators dated 06.03.2020, Sections C and D	

Microbiological analyses

Parameter	Method	Location
Legionella	DIN EN ISO 11731 (K23) 2019-03	AL, OP, WA
	Recommendation of the Federal Environmental Agency for the sampling and detection of Legionella in evaporative cooling plants, cooling towers and wet separators dated 06.03.2020, Sections E and F taking into account Annexes 1 and 2	
Colony count at 22 °C and 36 °C	DIN EN ISO 6222 (K 5) 1999-07	AL, OP, WA

9 Test method list for specialist module for SOIL AND CONTAMINATED SITES

Revised: LABO dated 16.08.2012

Test area 1: Solids

Section 1.1: Sampling and on-site examination

Test parameters	Methods/notes	Method		Location
Sampling plans		In accordance with the requirements of BBodSchV	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
		DIN ISO 10381-1: 2011	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
		DIN ISO 10381-5: 2011	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
Sampling for the analysis of suspected contaminated sites and contaminated sites	Digestion methods in the field: Hand drilling, sampling on excavations, small percussion bore holes 50 - 80 mm, samples in undisturbed bedding	DIN ISO 10381-2: 2003	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
		DIN EN ISO 22475-1: 2007	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
	Stockpile sampling	LAGA PN 98: 2001	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
Sampling after soil digestion for analysis of suspected contaminated sites and contaminated sites for volatile pollutants	The extraction agent must be placed in the sample vessels before the sample is taken so that overlaying takes place in the field; for information on sampling, see http://www.hlug.de/start/altlasten.html under contaminated site analysis	"Determination of BTEX/LHKW in solids from brownfields", Handbuch Altlasten Volume 7, Part 4, HLUG 2000	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
Sampling for investigation of natural, near-natural and cultivated sites		DIN ISO 10381-4: 2004	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
		VDLUFA-Methodenandbuch, Volume 1, A1	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
Sampling of sediments		DIN 38414-11: 1987	☒	AL, BE, BO[i], HA, HH, KO, MA, OP

Test parameters	Methods/notes	Method		Location
Sampling of suspended solids **- optional -**		DIN 38402-24: 2007	☐	
Sample description		Arbeitshilfe für die Bodenansprache im vor- und nachsorgenden Bodenschutz, excerpt from KA5, 2009 Bodenkundliche Kartieranleitung 5th Edition (KA5): 2005	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
	Series of standards on geotechnical investigation and testing	DIN EN ISO 14688-1: 2011	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
		DIN EN ISO 14689-1: 2011	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
		DIN EN ISO 22475-1: 2007	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
Determination of soil texture	Feel test in the field Note: Cannot always be used on contaminated surfaces with regard to work safety.	Arbeitshilfe für die Bodenansprache im vor- und nachsorgenden Bodenschutz, excerpt from KA5, 2009 Bodenkundliche Kartieranleitung 5th Edition (KA5): 2005	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
		DIN 19682-2: 2007	☒	AL, BE, BO[i], HA, HH, KO, MA, OP

Test parameters	Methods/notes	Method		Location
Sample storage, sample pretreatment in the field, sample transport		DIN 19747: 2009	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
		DIN ISO 10381-1: 2003	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
		DIN ISO 10831-2: 2003	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
		DIN ISO 18512: 2009	☒	AL, BE, BO[i], HA, HH, KO, MA, OP
	Overlay of soil with solvent in the field for analysis for volatile pollutants	DIN ISO 22155: 2006	☒	AL, BE, BO[i], HA, HH, KO, MA, OP

Section 1.2: Laboratory - Analysis of inorganic parameters

Analysis of inorganic parameters				
Test parameters	**Methods/notes**	**Method**		**Location**
Sample preparation and processing		DIN 19747: 2009	☒	AL, HA, MÜ, OP, RM
Dry matter	Field-fresh or air-dried soil samples	DIN ISO 11465: 1996	☐	
		DIN EN 14346: 2007	☒	AL, HA, MÜ, OP, RM
Organic carbon and total carbon after dry combustion (TOC)	Air-dried soil samples	DIN ISO 10694: 1996	☐	
		DIN EN 13137: 2001	☒	AL, OP
		DIN EN 15936: 2012	☒	AL, OP
pH value ($CaCl_2$)	Field-fresh or air-dried soil samples, c($CaCl_2$): 0.01 mol/l	DIN ISO 10390: 2005	☒	AL, HA, MÜ, OP, RM
Bulk density **- optional -**	Drying of a suitable volume of soil sample at 105 °C, weigh again	DIN ISO 11272: 2001	☒	AL
Grain-size distribution **- optional -**	1) Sieving, dispersion, pipette analysis	DIN ISO 11277: 2002	☐	
	2) Sieving, dispersion, hydrometer method	DIN 18123: 2011 in conjuntion with LAGA PN 98	☒	AL

Analysis of inorganic parameters				
Test parameters	**Methods/notes**	**Method**		**Location**
Aqua regia extract	Thermal, open vessel	DIN ISO 11466: 1997	☐	
	Thermal, open vessel & microwave digestion	DIN EN 13657: 2003	☒	AL, HA, MÜ, OP, RM
Ammonium nitrate extract		DIN 19730: 2009	☒	AL, MÜ
Alkaline digestion method **- optional -**	Metaborate fusion for chromium(VI) analysis	DIN EN 15192: 2007	☐	
Extraction for determination of thallium **- optional -**	HNO_3, H_2O_2	DIN ISO 20279: 2006	☐	
Arsenic (As) Antimony (Sb)	ICP-OES	DIN ISO 22036: 2009	☒	AL, HA, MÜ, OP
	ICP-MS	DIN EN ISO 17294-2: 2005	☒	AL, HA, MÜ, RM
	ET-AAS or hydride AAS	DIN ISO 20280: 2010	☐	
Cadmium (Cd) Chromium (Cr), total Cobalt (Co) Copper (Cu) Nickel (Ni) Lead (Pb) Zinc (Zn)	ET-AAS	DIN ISO 11047: 2003	☐	
	ICP-OES	DIN ISO 22036: 2009	☒	AL, HA, MÜ, OP
	ICP-MS	DIN EN ISO 17294-2: 2005	☒	AL, HA, MÜ, RM
Mercury (Hg)	AAS	DIN EN 1483: 2007	☒	AL, HA, MÜ, OP, RM
	Cold vapour AAS or cold vapour AFS	DIN ISO 16772: 2005	☒	AL, HA, MÜ, OP, RM
Cyanide		DIN ISO 17380: 2011	☒	AL, MÜ, OP, RM
		DIN ISO 11262: 2012	☐	
Chromium (VI) **- optional -**	IC with photometric detection	DIN EN 15192: 2007	☐	
Molybdenum (Mo) Vanadium (V) **- optional -**	ICP-OES	DIN ISO 22036: 2009	☒	AL, HA, MÜ, OP
	ICP-MS	DIN EN ISO 17294-2: 2005	☒	AL, HA, MÜ, RM

Analysis of inorganic parameters				
Test parameters	**Methods/notes**	**Method**		**Location**
Selenium (Se) **- optional -**	ICP-OES	DIN ISO 22036: 2009	☒	AL, HA, MÜ, OP
	ICP-MS	DIN EN ISO 17294-2: 2005	☒	AL, HA, MÜ, RM
	ET-AAS or hydride AAS	DIN ISO 20280: 2010	☐	
Thallium (Tl) from the HNO_3/H_2O_2 extract **- optional -**	ET-AAS	DIN ISO 20279: 2006	☐	
	ICP-OES	DIN ISO 22036: 2009	☐	
	ICP-MS	DIN EN ISO 17294-2: 2005	☐	
Uranium (U) Tungsten (W) **- optional -**	ICP-MS	DIN EN ISO 17294-2: 2005	☒	AL, HA, MÜ, RM
	ICP-OES	DIN ISO 22036: 2009	☒	AL, OP

Section 1.3: Laboratory - Analysis of organic parameters

Analysis of organic parameters				
Test parameters	**Methods/notes**	**Method**		**Location**
Specific sample preparation	Note: For chemical drying or air-drying of the sample material, it should be noted that if non-water-miscible solvents such as hexane/heptane in conjunction with a 1x extraction are used (widely used as a laboratory method), the residual moisture will produce results that are lower than they should be, particularly with cohesive soil material samples. Soxhlet extractions or solvent mixtures with acetone for extraction are essential for samples dried in this way.	DIN 19747: 2009	☒	AL, HA, MÜ, OP, RM
Dry matter	Field-fresh or air-dried soil samples	DIN ISO 11465: 1996	☐	
		DIN EN 14346: 2007	☒	AL, HA, MÜ, OP, RM
Organic carbon and total carbon after dry combustion (TOC)	Air-dried soil samples	DIN ISO 10694: 1996	☐	
		DIN EN 13137: 2001	☒	AL, OP
		DIN EN 15936: 2012	☒	AL, OP
pH value ($CaCl_2$)	Field-fresh or air-dried soil samples, c($CaCl_2$): 0.01 mol/l	DIN ISO 10390: 2005	☒	AL, HA, MÜ, OP, RM
Bulk density **- optional -**	Drying of a suitable volume of soil sample at 105 °C, weigh again	DIN ISO 11272: 2001	☒	AL

Analysis of organic parameters				
Test parameters	**Methods/notes**	**Method**		**Location**
Particle size distribution - **optional -**	1) Sieving, dispersion, pipette analysis	DIN ISO 11277: 2002	☐	
	2) Sieving, dispersion, hydrometer method	DIN 18123: 2011 in conjuntion with LAGA PN 98	☒	AL
Polycyclic aromatic hydrocarbons (PAHs)	GC-MS	DIN ISO 18287: 2006	☒	AL, MÜ, OP
	HPLC-UV/F* (*Acenaphthylene cannot be determined by fluorescence detector)	DIN ISO 13877: 2000	☒	HA
16 PAHs (EPA) Naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, chrysene, benzo[a]anthracene, benzo[b]- / benzo[k]fluoranthene, benzo[a]pyrene, indeno[1,2,3-cd]pyrene, dibenzo[a,h]anthracene, benzo[g,h,i]perylene	Note on the type of summation must be appended to the result.	DIN 38414-23: 2002	☒	AL, HA, MÜ, OP, RM
Hexachlorobenzene	GC-ECD, GC-MS	DIN ISO 10382: 2003	☒	AL, MÜ
Pentachlorophenol	GC-ECD, GC-MS	DIN ISO 14154: 2005	☒	AL
Aldrin, DDT, HCH mixture	GC-ECD, GC-MS	DIN ISO 10382: 2003	☒	AL, MÜ
		DIN EN 15308: 2008	☐	
Polychlorinated biphenyls (PCB6/ PCB7): PCB6 congeners 28, 52, 101, 138, 153, 180, and 118	GC-ECD, GC-MS	DIN ISO 10382: 2003* (* This standard takes into account congener PCB 118)	☒	AL, HA, MÜ, OP, RM
	Extraction with acetone/petroleum ether or Soxhlet extraction	DIN EN 15308: 2008* (* This standard takes into account congener PCB 118)	☒	AL, MÜ, OP, RM
	The type of summation must be indicated (PCB6/PCB7)	DIN 38414-20: 1996 (This standard is also suitable for determination of the congener PCB 118 - relevant SOP must be available)	☒	AL
Typical explosive compounds (HPLC) (2,4-dinitrotoluene, 2,6-dinitrotoluene hexanitrodiphenylamine, hexogen, nitropenta (PETN), 2,4,6-trinitrotoluene) **- optional -**	Extraction with methanol or acetonitrile and quantification using HPLC-UV/DAD	E DIN ISO 11916-1: 2011 (ISO/FDIS 11916-1: 2011)	☒	AL

Analysis of organic parameters				
Test parameters	**Methods/notes**	**Method**		**Location**
Typical explosive compounds (GC) (2,4-dinitrotoluene, 2,6-dinitrotoluene 2,4,6-trinitrotoluene) **- optional -**	Extraction with methanol. Dissolution in toluene and quantification using GC-ECD or GC-MS	E DIN ISO 11916-2: 2011 (ISO/FDIS 11916-2: 2011)	☐	
Petroleum hydrocarbons (MKW, C_{10}-C_{40}) **- optional -**	GC-FID The chromatogram must be evaluated and information on mobile (C_{10}-C_{22}) and low mobility (>C_{22}-C_{40}) fractions must be provided (LAGA KW/04)	DIN ISO 16703: 2005	☒	AL, MÜ, OP, RM
		LAGA KW/04: 2009	☒	AL, MÜ, OP, RM
BTEX aromatics, volatile halogenated hydrocarbons (VHHC) Individual parameters as per the standard **- optional -**	Headspace, GC See also SIC-20: "Determination of BTEX/LHKW in solids from brownfields", Handbuch Altlasten Volume 7,Methods of analysis, Expert Committee on Contaminated Sites Analysis, Part 4, Hessian Agency for Nature Conservation, Environment and Geology, Wiesbaden 2000	DIN ISO 22155: 2006	☒	AL, HA, MÜ, OP, RM

Section 1.4: Laboratory - PCDD, PCDF and dioxin-like PCB analysis *

Analysis - PCDD, PCDF and dioxin-like PCB				
Test parameters	**Methods/notes**	**Method**		**Location**
Sample preparation and processing		DIN 19747: 2009	☒	AL, HA, MÜ, OP, RM
Dry matter	Field-fresh or air-dried soil samples	DIN ISO 11465: 1996	☐	
		DIN EN 14346: 2007	☒	AL, HA, MÜ, OP, RM
Organic carbon and total carbon after dry combustion (TOC)	Air-dried soil samples	DIN ISO 10694: 1996	☐	
		DIN EN 13137: 2001	☒	AL, OP
		DIN EN 15936: 2012	☒	AL, OP
pH value ($CaCl_2$)	Field-fresh or air-dried soil samples, c($CaCl_2$): 0.01 mol/l	DIN ISO 10390: 2005	☒	AL, HA, MÜ, OP, RM
Bulk density **- optional -**	Drying of a suitable volume of soil sample at 105 °C, weigh again	DIN ISO 11272: 2001	☒	AL

Analysis - PCDD, PCDF and dioxin-like PCB				
Test parameters	**Methods/notes**	**Method**		**Location**
Grain-size distribution **- optional -**	1) Sieving, dispersion, pipette analysis	DIN ISO 11277: 2002	☐	
	2) Sieving, dispersion, hydrometer method	DIN 18123: 2011 in conjuntion with LAGA PN 98	☒	AL
PCDD / PCDF, DL-PCBs	GC-MS, analysis in accordance with the internal standard method using the relevant $^{13}C_{12}$-labelled standards for a congener in each case.	DIN 38414-24: 2000 The standard is also suitable for determination of the dioxin-like congeners of PCBs; see the explanations set out in DIN 38407-3 for this purpose: 1998, method F 3-3 - section 14 - should also be consulted. The limit of quantification of dl-PCB in soil is comparable to that of PCDD/F (1 ng/kg to 10 ng/kg).	☒	AL

Test area 2: Eluates and percolates, aqueous media

Section 2.1: Sampling and on-site examination

Sampling				
Test parameters	**Methods/notes**	**Method**		**Location**
Sampling programmes and sampling techniques		DIN EN ISO 5667-1: 2007	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Sampling of groundwater	The AQA information sheet P 8/2, 1996 provides further essential information on the organisation and implementation of sampling	ISO 5667-11: 2009	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
		DIN 38402-13: 1983 (Note: Replaced by DIN ISO 5667-11)	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
		DVGW Work Sheet S W 112: 2011	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA

Sampling				
Test parameters	**Methods/notes**	**Method**		**Location**
Sampling of leachate using suction cups **- optional -**	The LAWA Guideline "Leachate, guideline for observation and evaluation", revised 3.4.2003 (yellow paper) provides further essential information on the organisation and implementation of sampling	DWA-M 905: 2012	☐	
		DVWK-M 217: 1990 (Note: Will be updated)	☐	
Sampling of surface water (running waters)	The AQA information sheet P 8/3, 1998 provides further essential information on the organisation and implementation of sampling	DIN 38402-15: 2010	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Sampling of surface water (barrages and lakes)		DIN 38402-12: 1985	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA

On-site testing				
Test parameters	**Methods/notes**	**Method**		**Location**
Water quality, determination of colour		DIN EN ISO 7887: 2012	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Water quality, determination of turbidity		DIN EN ISO 7027: 2000	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Odour		DEV B 1/2 1971	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Temperature		DIN 38404-4: 1976	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
pH value		DIN EN ISO 10523: 2012	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Oxygen content		DIN EN 25814: 1992	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Electrical conductivity		DIN EN 27888: 1993	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA

On-site testing				
Test parameters	**Methods/notes**	**Method**		**Location**
Determination of the oxidation reduction (redox) potential	For leachate/groundwater samples, sample extraction and measuring arrangement (flow cell under exclusion of air) are decisive factors for the reliability of the result.	DIN 38404 Part 6: 1984	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA
Sample storage, sample pretreatment, sample transport	Note: The specifications in the respective individual standards take precedence, i.e. DIN EN ISO 5667-3 is of secondary importance	DIN EN ISO 5667-3: 2004	☒	AL, BE, BO, DR, HA, MÜ, OP, RM, WA

Section 2.2: Laboratory - Analysis of eluates/percolates for inorganic parameters

Eluates/percolates				
Test parameters	**Methods/notes**	**Method**		**Location**
Batch test - Elution of inorganic substances	Liquid to solid ratio of 2 l/kg	DIN 19529: 2009	☒	AL, OP, RM
Batch test - Elution of organic substances	Liquid to solid ratio of 2 l/kg	DIN 19527: 2012	☒	AL, OP, RM
Batch test - Elution of inorganic substances - **optional**	Liquid to solid ratio of 10 l/kg	DIN EN 12457-4: 2003	☒	AL, HA, MÜ, OP, RM
Percolation method for organic and inorganic substances **- optional -**		DIN 19528: 2009	☒	AL, MÜ
Examination for absorption availability **- optional -**		DIN 19738: 2004	☐	

Analysis - Inorganic parameters				
Test parameters	**Methods/notes**	**Method**		**Location**
Antimony (Sb) Arsenic (As)	ICP-OES	DIN EN ISO 11885: 2009	☒	AL, HA, MÜ, OP
		DIN ISO 22036: 2009	☒	AL, HA, MÜ, OP
	ICP-MS	DIN EN ISO 17294-2: 2005	☒	AL, HA, MÜ, RM
	ET-AAS or hydride AAS	DIN ISO 20280: 2010	☐	

Analysis - Inorganic parameters				
Test parameters	**Methods/notes**	**Method**		**Location**
Lead (Pb) Cadmium (Cd) Chromium (Cr), total Cobalt (Co) Copper (Cu) Molybdenum (Mo) Nickel (Ni) Zinc (Zn)	ET-AAS	DIN EN ISO 15586: 2004	☐	
	ICP-OES	DIN EN ISO 11885: 2009	☒	AL, HA, MÜ, OP
		DIN ISO 22036: 2009	☒	AL, HA, MÜ, OP
	ICP-MS	DIN EN ISO 17294-2: 2005	☒	AL, HA, MÜ, RM
Mercury (Hg)	AAS	DIN EN 1483: 2007	☒	AL, HA, MÜ, OP, RM
	Cold vapour AAS or cold vapour AFS	DIN ISO 16772: 2005	☒	AL, HA, MÜ, OP, RM
Cyanide (CN-), total and cyanide, readily liberated	Spectrophotometry	DIN EN ISO 14403: 2002	☒	AL, HA, MÜ, OP, RM
		DIN 38405-13: 2011	☐	
		DIN EN ISO 17380: 2011	☒	AL, MÜ, OP, RM
Fluoride (F^-), chloride (Cl^-), sulphate (SO_4^{2-})	Ion chromatography as per the individual methods	DIN EN ISO 10304-1:2009	☒	AL, HA, MÜ, OP, RM
		DIN 38405-1/ -4/ -5: 1985	☒	AL, MÜ, OP
Vanadium (V) **- optional -**	ET-AAS	DIN EN ISO 15586: 2004	☐	
	ICP-OES	DIN EN ISO 11885: 2009	☒	AL, HA, MÜ, OP
		DIN ISO 22036: 2009	☒	AL, HA, MÜ, OP
	ICP-MS	DIN EN ISO 17294-2: 2005	☒	AL, HA, MÜ, RM
Uranium (U) **- optional -**	ICP-MS	DIN EN ISO 17294-2: 2005	☒	AL, HA, MÜ, RM
Tin (Sn) Thallium (Tl) Tungsten (W) **- optional -**	ICP-OES	DIN EN ISO 11885: 2009	☒	AL, HA, MÜ, OP
		DIN ISO 22036: 2009	☒	AL, HA, MÜ, OP
	ICP-MS	DIN EN ISO 17294-2: 2005	☒	AL, HA, MÜ, RM

Analysis - Inorganic parameters				
Test parameters	**Methods/notes**	**Method**		**Location**
Selenium (Se) **- optional -**	ET-AAS	DIN EN ISO 15586: 2004	☐	
	ICP-OES	DIN EN ISO 11885: 2009	☒	AL, HA, MÜ, OP
		DIN ISO 22036: 2009	☒	AL, HA, MÜ, OP
	ICP-MS	DIN EN ISO 17294-2: 2005	☒	AL, HA, MÜ, RM
	ET-AAS or hydride AAS	DIN ISO 20280: 2010	☐	
Chromium (Cr VI)	Spectrophotometry	DIN 38405-24: 1987	☒	AL, HA, MÜ, OP
	Ion chromatography	DIN EN ISO 10304-3: 1997	☐	

Section 2.3: Laboratory - Analysis of eluates/percolates for organic parameters

Eluates/percolates				
Test parameters	**Methods/notes**	**Method**		**Location**
Batch test - Elution of inorganic substances	Liquid to solid ratio of 2 l/kg	DIN 19529: 2009	☒	AL, OP, RM
Batch test - Elution of organic substances	Liquid to solid ratio of 2 l/kg	DIN 19527: 2012	☒	AL, OP, RM
Batch test - Elution of inorganic substances - **optional -**	Liquid to solid ratio of 10 l/kg	DIN EN 12457-4: 2003	☒	AL, HA, MÜ, OP, RM
Percolation method for organic and inorganic substances **- optional -**		DIN 19528: 2009	☒	AL, MÜ
Examination for absorption availability **- optional -**		DIN 19738: 2004	☐	

Analysis - Organic parameters				
Test parameters	**Methods/notes**	**Method**		**Location**
Note on volatile compounds (especially BTEX, LHKW): The preparation of eluates and percolates for the subsequent determination of volatile substances is prone to error due to the high rate of loss. These compounds can therefore only be determined from directly extracted leachate, groundwater and surface water. Because of the negative pressure effects, only submersible pumps and not suction pumps should be used with these compounds when taking groundwater samples.				
BTEX aromatics: Benzene, toluene, ethylbenzene, xylenes, styrene	Purge + trap / desorption, GC-MS	DIN EN ISO 15680: 2004	☐	
	Liquid extraction and headspace, GC	DIN 38407-9: 1991	☒	AL, HA, MÜ, OP, RM
	Headspace-SPME, GC-MS	DIN 38407-41: 2011	☐	
Volatile halogenated hydrocarbons (VOC) Individual parameters as per standard	Purge + trap / desorption, GC-MS	DIN EN ISO 15680: 2004	☐	
	Liquid extraction and headspace, GC	DIN EN ISO 10301: 1997	☒	AL, HA, MÜ, OP, RM
	Headspace-SPME, GC-MS	DIN 38407-41: 2011	☐	
Aldrin	GC-ECD, GC-MS	DIN EN ISO 6468: 1997	☒	AL
		DIN 38407-2: 1993	☒	AL
Dichlorodiphenyltrichloroethane (DDT)	GC-ECD, GC-MS	DIN EN ISO 6468: 1997	☒	AL
		DIN 38407-2: 1993	☒	AL
Chlorophenols	GC-ECD, GC-MS	DIN EN 12673: 1999	☒	AL
Chlorobenzenes (Cl3-Cl6)	GC-ECD, GC-MS	DIN 38407-2: 1993	☒	AL
	Liquid extraction, GC-ECD, GC-MS	DIN EN ISO 6468: 1997	☒	AL
Chlorobenzenes (Cl1-Cl3)	Liquid extraction and headspace, GC-ECD (MS where applicable)	DIN EN ISO 10301: 1997	☒	AL, HA, MÜ, OP, RM
Polychlorinated biphenyls (PCB6 / PCB7): PCB6 congeners 28, 52, 101, 138, 153, 180, and 118	GC-ECD, GC-MS The type of summation must be indicated (PCB6 / PCB7)	DIN 38407-2: 1993	☒	AL
		DIN 38407-3: 1998	☒	AL, HA, RM
16 PAH (EPA) (For HPLC without acenaphthylene)	GC-MS	DIN EN ISO 17993: 2004	☒	AL, HA, MÜ, OP, RM
	HPLC-F	DIN 38407-39: 2011	☒	AL, HA
Naphthalene	GC-FID, GC-MS	DIN EN ISO 15680: 2004	☐	
		DIN 38407-9: 1991	☒	AL, HA, MÜ, OP, RM
Petroleum hydrocarbons (MKW, C_{10}-C_{40})	GC-FID	DIN EN ISO 9377-2: 2001	☒	AL, HA, MÜ, OP, RM

Analysis - Organic parameters				
Test parameters	**Methods/notes**	**Method**		**Location**
Note on volatile compounds (especially BTEX, LHKW): The preparation of eluates and percolates for the subsequent determination of volatile substances is prone to error due to the high rate of loss. These compounds can therefore only be determined from directly extracted leachate, groundwater and surface water. Because of the negative pressure effects, only submersible pumps and not suction pumps should be used with these compounds when taking groundwater samples.				
Typical explosive compounds (HPLC) (2-nitrotoluene, 3-nitrotoluene, 4-nitrotoluene, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 2,4,6-trinitrotoluene, 2-amino-4,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, nitropenta (PETN), hexogen, 2,4,6-trinitrophenol (picric acid), nitrobenzene, 1,3-dinitrobenzene, 1,3,5-trinitrobenzene, hexanitro-diphenylamine (hexyl), N-methyl-N,2,4,6-tetranitroaniline, octogen (HMX)) **- optional -**	Determination of certain explosives and related compounds - Method using HPLC / UV detection	DIN EN ISO 22478: 2006	☒	AL
Typical explosive compounds (GC) (2-nitrotoluene, 3-nitrotoluene, 4-nitrotoluene, 2,4-dinitrotoluene, 2,6-dinitrotoluene, 2,4,6-trinitrotoluene, 2-amino-4,6-dinitrotoluene, 4-amino-2,6-dinitrotoluene, nitrobenzene, 1,3-dinitrobenzene, 1,3,5-trinitrobenzene) **- optional -**	Determination of selected nitroaromatic compounds by gas-liquid chromatography	DIN 38407-17: 1999	☐	

Analysis - Organic parameters				
Test parameters	**Methods/notes**	**Method**		**Location**
Note on volatile compounds (especially BTEX, LHKW): The preparation of eluates and percolates for the subsequent determination of volatile substances is prone to error due to the high rate of loss. These compounds can therefore only be determined from directly extracted leachate, groundwater and surface water. Because of the negative pressure effects, only submersible pumps and not suction pumps should be used with these compounds when taking groundwater samples.				
Phenols (Phenol, 2-methylphenol; 3-methylphenol; 4-methylphenol, 2,3-dimethylphenol; 2,4-dimethylphenol; 2,5-dimethylphenol; 2,6-dimethylphenol; 3,4-dimethylphenol; 3,5-dimethylphenol; 2-ethylphenol; 3-ethylphenol; 4-ethylphenol; 2,3,5-trimethylphenol; 2,3,6-trimethylphenol; 2,4,6-trimethylphenol; 3,4,5-trimethylphenol) **- optional -**	GC-ECD, GC-MS	ISO 8165-2: 1999	☐	
		DIN EN 12673: 1999	☒	AL

Test area 3 - Soil gas, landfill gas

Section 3.1: Sampling and on-site examination

Sampling				
Test parameters	**Methods/notes**	**Method**		**Location**
Pile core probing	Implementation of small percussion bore holes with a diameter of at least 50 mm	DIN ISO 10381-2: 2003	☒	AL, BE, BO[i], HA, OP
		DIN EN ISO 22475-1: 2007	☒	AL, BE, BO[i], HA, OP
Sampling of soil gas		VDI 3865 Blatt 2: 1998	☒	AL, BE, BO, BO[i], HA, OP, WA
		VDI 3865 Blatt 1: 2005	☒	AL, BE, BO, BO[i], HA, OP, WA
		DIN ISO 10381-7: 2007	☒	AL, BE, BO, BO[i], HA, OP, WA

On-site testing				
Test parameters	**Methods/notes**	**Method**		**Location**
Carbon dioxide (CO_2)	Direct-display instrument		☒	AL, BE, BO, BO[i], HA, OP, WA
Methane (CH_4)	Direct-display instrument		☒	AL, BE, BO, BO[i], HA, OP, WA
Hydrogen sulphide (H_2S)	Direct-display instrument		☒	AL, BE, BO, BO[i], HA, OP, WA
Oxygen (O_2)	Direct-display instrument		☒	AL, BE, BO, BO[i] HA, OP, WA
Sum parameters of organic trace gases	Direct-display instrument		☒	AL, BE, BO, BO[i] HA, OP, WA

Section 3.2: Laboratory - Analysis of soil gas, landfill gas

Test parameters	Methods/notes	Method		Location
Aromatics (BTEX)		VDI 3865 Blatt 3: 1998	☒	RM
		VDI 3865 Blatt 4: 2000	☒	AL, MÜ, RM
Volatile halogenated hydrocarbons (VOC)		VDI 3865 Blatt 3: 1998	☒	RM
		VDI 3865 Blatt 4: 2000	☒	AL, MÜ, RM

For the requirements for the sampling of water, soil and soil gas on federal properties, full competence of each of the locations listed is confirmed in accordance with the construction guideline "Arbeitshilfen Boden- und Grundwasserschutz" (soil and groundwater protection aids) (BfR AH BoGwS), Annex 2.5.

10 Test method list for specialist module for WASTE

Revised: LAGA, May 2018

Test area 1: Sewage sludge

	Sections / Parameters	**Basis /** Methods		**Locations**
		AbfKlärV		
1.1	**Sampling and sample preparation**	**Section 32 (3) and (4) AbfKlärV**		
a)	**Sampling**	**DIN EN ISO 5667-13 (08.11) and DIN 19698-1 (05.14)**	☒	AL, BE, BO, DR, HA, OP, RM, WA
b)	**Sample preparation**	**DIN 19747 (07.09)**	☒	AL

1.2	**Heavy metals and chromium VI**[1]	**Section 5 (1) (1) AbfKlärV**		
	Heavy metals			
	Aqua regia digestion	**DIN EN 16174 (11.12)**	☒	AL
		DIN EN 16174 Method A (11.12)	☒	AL
		DIN EN 13346 Method A (04.01)	☐	
	Arsenic, lead, cadmium, chromium, copper, nickel, zinc, iron (from aqua regia digestion)	**DIN EN ISO 11885 (09.09)**	☐	
		DIN ISO 11047 (05.03)	☐	
		DIN EN ISO 17294-2 (01.17)	☐	
		DIN EN 16170 (01.17)	☒	AL
		DIN EN 16171 (01.17)	☒	AL
		CEN/TS 16172; DIN SPEC 91258 (04.13)	☐	
		DIN ISO 22036 (06.09)	☐	

[1] By way of derogation from Part III No. 1, proof of competence for section 1.2 may also be provided without chromium VI.

	Thallium (from aqua regia digestion)	**DIN EN ISO 11885 (09.09)**	☐	
		DIN ISO 11047 (05.03)	☐	
		DIN EN ISO 17294-2 (01.17)	☐	
		DIN 38406-26 (07.97)	☐	
		DIN EN 16170 (01.17)	☐	
		DIN EN 16171 (01.17)	☒	AL
		CEN/TS 16172; DIN SPEC 91258 (04.13)	☐	
		DIN ISO 22036 (06.09)	☐	
	Mercury (from aqua regia digestion)	**DIN EN ISO 17852 (04.08)**	☐	
		DIN EN 16175-1 (12.16)	☒	AL
		DIN EN 16175-2 (12.16)	☐	
		DIN EN 16171 (01.17)	☒	AL
		DIN EN ISO 12846 (08.12)	☐	
	Chromium VI (from alkaline hot extract)[2]	**DIN EN 16318 (07.16)**	☐	
		DIN EN 15192 (02.07)	☐	
		DIN 10304-3 (11.97)[3]	☐	
		DIN EN ISO 17294-2 (01.17)[5]	☐	

1.3	**Adsorbed organic bound halogens**	**Section 5 (1) (2) AbfKlärV**		
	AOX (from dry residue)	**DIN 38414-18 (11.89)**	☒	AL
		DIN EN 16166 (11.12)	☒	AL

1.4	**Physical parameters, nutrients**	**Section 5 (1) (3) - (9) AbfKlärV**		
	Dry residue	**DIN EN 15934 (11.12)**	☒	AL
		DIN EN 12880 (02.01)	☐	
	Organic substance as loss on ignition (from dry residue)	**DIN EN 15935 (11.12)**	☒	AL
		DIN EN 12879 (02.01)	☐	

[2] For the alkaline hot extract, the DIN EN 16318 or DIN EN 15192 methods must be used.

[3] Instead of post-column derivatisation with 1,5-diphenylcarbonohydrazide, determination of Cr(IV) after separation by ion chromatography in accordance with DIN 10304-3 can also be carried out by coupling with ICP-MS detection based on DIN EN ISO 17294-2.

	pH value	**DIN EN 15933 (11.12)**	☒	AL
		DIN 38414-5 (07.09)	☐	
	Alkaline agents as CaO	**VDLUFA Methodenbuch Volume II.2, Method 4.5.1**	☒	AL
	Ammonium nitrogen (NH_4-N)	**DIN 38406-5 (10.83)**	☒	AL
	Total nitrogen (N_{total})	**DIN EN 13342 (01.01)**	☐	
		DIN EN 16169 (11.12)	☒	AL
		DIN ISO 11261 (05.97)	☐	
	Aqua regia digestion	**DIN EN 16174 (11.12)**	☒	AL
		DIN EN 13346 Method A (04.01)	☐	
	Phosphorus (P) (from aqua regia digestion) (conversion: phosphorus (P) = 2,291 for phosphorus pentoxide (P_2O_5))	**DIN EN ISO 11885 (09.09)**	☒	AL
		DIN EN ISO 6878 (09.04)	☐	
		DIN EN ISO 17294-2 (01.17)	☒	AL
		DIN EN 16171 (01.17)	☒	AL
		DIN EN 16170 (01.17)	☒	AL

	Persistent organic pollutants	**Section 5 (2) (1) - (4) AbfKlärV**		
1.5	**Polychlorinated biphenyls (PCB)**	**DIN 38414-20 (01.96)**	☒	AL
		DIN EN 16167 (11.12)	☐	

1.6	**Polychlorinated dibenzodioxins and furans (PCDD/PCDF) and dioxin-like polychlorinated biphenyls (DL-PCB)**	**DIN CEN/TS 16190; DIN SPEC 91267 (05.12)**	☒	AL
		DIN 38414-24 (10.00)	☒	AL

1.7	**Benzo(a)pyrene (BaP)**	**DIN EN 15527 (09.08)**	☐	
		DIN 38414-23 (02.02)	☒	AL
		DIN CEN/TS 16181; DIN SPEC 91243 (12.13)	☐	

1.8	**Polyfluorinated compounds (PFC) with the individual substances perfluorooctanoic acid and perfluorooctanesulphonic acid (PFOA/PFOS)**	**DIN 38414-14 (08.11)**	☒	AL

Test area 2: Base

	Sections / Parameters	**Basis /** Methods		**Locations**
		AbfKlärV and BioAbfV		
2.1	**Sampling and sample preparation**	**Section 32 (2) AbfKlärV and Section 9 BioAbfV**		
a)	**Sampling**	**DIN ISO 10381-1 (08.03) and DIN ISO 10381-4 (04.04)**	☒	AL, BE, BO, HA, OP
b)	**Sample preparation**	**DIN ISO 19747 (07.09)**	☒	AL

2.2	**Heavy metals**	**Section 4 (1) AbfKlärV Section 9 (2) BioAbfV**		
	Aqua regia digestion	**DIN EN 16174 (11.12)**	☒	AL
		DIN EN 13657 (01.03)	☐	
	Lead, cadmium, chromium, copper, nickel, zinc, (from aqua regia digestion)	**DIN ISO 11047 (05.03)**	☐	
		DIN EN ISO 17294-2 (01.17)	☐	
		DIN ISO 22036 (06.09)	☐	
		DIN EN 16170 (01.17)	☒	AL
		DIN EN 16171 (01.17)	☒	AL
		DIN EN ISO 11885 (09.09)	☐	
	Mercury (from aqua regia digestion)	**DIN ISO 16772 (06.05)**	☒	AL
		DIN EN 12846 (08.12)* a method incorrectly specified in legislation; DIN EN ISO 12846 (08.12) correct	☐	
		EN 16175-1 (12.16)	☐	
		EN 16175-2 (12.16)	☐	
		DIN EN 16171 (01.17)	☒	AL
		DIN EN ISO 17852 (04.08)	☐	

2.3	**Physical parameters, phosphate**	**Section 4 (1) AbfKlärV Section 9 (2) BioAbfV**		
	Phosphate (from CAL/DL extract; P-content determination must be converted to o-phosphate)	**VDLUFA Methodenbuch, Volume I, Method A 6.2.1.1 (6th Part 2012)**	☒	AL
		VDLUFA Methodenbuch, Volume I, Method A 6.2.1.2 (Main Volume	☒	AL
		DIN EN ISO 10304-1 (07.09)	☐	
		DIN ISO 22036 (06.09)	☒	AL
	Soil texture (clay content)	**DIN 19682-2 (07.14)**	☒	AL
		DIN 18123 (04.11)	☒	AL
	pH value	**DIN EN 15933 (11.12)**	☒	AL
		ISO 10390 (02.05)	☐	
		VDLUFA Methodenhandbuch I A 5.1.1	☐	
	Dry residue	**DIN EN 15934 (11.12)**	☒	AL
		DIN EN 12880 (02.01)	☐	

	Organic substances	**Section 4 (2) AbfKlärV**		
2.4	**Polychlorinated biphenyls (PCB)**	**DIN ISO 10382 (05.03)**	☒	AL
		DIN EN 16167 (11.12)	☐	
2.5	**Benzo(a)pyrene (B(a)**	**DIN ISO 18287 (05.06)**	☒	AL
		DIN CEN TS 16181; DIN SPEC 91243 (12.13)	☐	
		DIN 38414-23 (02.02)	☒	AL

Test area 3: Biowaste

	Sections/ Parameter	**Basis/** Method		**Locations**
		BioAbfV		
3.1	**Sampling and sample preparation**	**Section 4 (9) BioAbfV**		
a)	**Sampling**	**DIN EN 12579 (01.00) and** **DIN 51750- 1 (12.90) and** **DIN 51750- 2 (12.90) and** **DIN EN ISO 5667- 13 (08.11)**	☒	AL, BE, BO, DR, HA, OP, WA
b)	**Sample preparation**	DIN 19747 (07.09) in conjunction with Annex 3, Section 1.3.3	☒	AL
		DIN EN 13040 (02.07)	☒	AL

3.2	**Heavy metals**	**Section 4 (5) BioAbfV**		
	Aqua regia digestion	**DIN EN 13650 (01.02)**	☒	AL
		DIN EN 16174 (11.12)	☒	AL
		DIN EN 13657 (01.03)	☒	AL
		DIN EN 13346 (04.01)	☒	AL
	Lead (from aqua regia digestion)	**DIN 38406- 6 (07.98)**	☐	
		DIN ISO 11047 (05.03)	☐	
		DIN EN ISO 11885 (04.98)	☒	AL
		DIN EN ISO 17294- 2 (02.05)	☒	AL
		DIN EN ISO 11885 (09.09)	☒	AL
		DIN EN ISO 22036 (06.09)	☒	AL
	Cadmium (from aqua regia digestion)	**DIN EN ISO 5961 (05.95)**	☐	
		DIN ISO 11047 (05.03)	☐	
		DIN EN ISO 11885 (04.98)	☒	AL
		DIN EN ISO 17294- 2 (02.05)	☒	AL
		DIN EN ISO 17294- 2 (01.17)	☒	AL
		DIN EN ISO 11885 (09.09)	☒	AL
		DIN EN ISO 22036 (06.09)	☒	AL

	Chromium (from aqua regia digestion)	**DIN EN 1233 (08.96)**	☐	
		DIN ISO 11047 (05.03)	☐	
		DIN EN ISO 11885 (04.98)	☒	AL
		DIN EN ISO 17294- 2 (02.05)	☒	AL
		DIN EN ISO 17294- 2 (01.17)	☒	AL
		DIN EN ISO 11885 (09.09)	☒	AL
		DIN EN ISO 22036 (06.09)	☒	AL
	Copper (from aqua regia digestion)	**DIN 38406- 7 (09.91)**	☐	
		DIN ISO 11047 (05.03)	☐	
		DIN EN ISO 11885 (04.98)	☒	AL
		DIN EN ISO 17294- 2 (02.05)	☒	AL
		DIN EN ISO 17294- 2 (01.17)	☒	AL
		DIN EN ISO 11885 (09.09)	☒	AL
		DIN EN ISO 22036 (06.09)	☒	AL
	Nickel (from aqua regia digestion)	**DIN 38406- 11 (09.91)**	☐	
		DIN ISO 11047 (05.03)	☐	
		DIN EN ISO 11885 (04.98)	☒	AL
		DIN EN ISO 17294- 2 (02.05)	☒	AL
		DIN EN ISO 17294- 2 (01.17)	☒	AL
		DIN EN ISO 11885 (09.09)	☒	AL
		DIN EN ISO 22036 (06.09)	☒	AL
	Mercury (from aqua regia digestion)	**DIN EN 1483 (07.07)**	☒	AL
		DIN EN 12338 (10.98)	☐	
		DIN EN ISO 12846 (08.12)	☒	AL

	Zinc (from aqua regia digestion)	**DIN 38406- 8 (10.04)**	☐	
		DIN ISO 11047 (05.03)	☐	
		DIN EN ISO 11885 (04.98)	☒	AL
		DIN EN ISO 17294- 2 (02.05)	☒	AL
		DIN EN ISO 17294- 2 (01.17)	☒	AL
		DIN EN ISO 11885 (09.09)	☒	AL
		DIN EN ISO 22036 (06.09)	☒	AL

3.3	**Physical parameters, foreign matter**	**Section 4 (5) BioAbfV**		
	Dry residue	**DIN EN 13040 (02.07)**	☒	AL
		DIN EN 13040 (01.08)	☒	AL
	pH value	**DIN EN 13037 (02.00)**	☒	AL
		DIN EN 13037 (01.12)	☒	AL
	Salt content	**DIN EN 13038 (02.00)**	☒	AL
		DIN EN 13038 (01.12)	☒	AL
	Organic substance as loss on ignition (from dry residue)	**DIN EN 13039 (02.00)**	☒	AL
	Stones and foreign matter	**Annex 3 BioAbfV, No. 1.3.3 Method book for the analysis of organic fertilisers, soil improvers and substrates, Bundesgütegemeinschaft Kompost e.V.**	☒	AL

Section 3.4 - not used

3.5	**Testing of sanitised biowaste *)**	**Section 3 (4) BioAbfV**		
-	**Disease hygiene**			
	Salmonella	**Annex 2 BioAbfV**	☒	AL
-	**Phyto-hygiene**			
	Viable seeds and parts of plants capable of producing shoots	**Annex 2 BioAbfV**	☒	AL

*) By way of derogation from Section III No. 1, proof of competence for sections 3.4 and 3.5 can be provided for each individual parameter.

Test area 4: Waste oil, insulating liquid

	Sections/ Parameter	**Basis/** Method		**Locations**
		Section 5 (3) AltölV		
4.1	**Sampling**	**Annex 2, No. 1**	☒	AL, BE, BO, HA, WA
		DIN 51750- 1 (08.83)	☒	AL, BE, BO, HA, WA
		DIN 51750- 1 (12.90)	☒	AL, BE, BO, HA, WA
		DIN 51750- 2 (03.84)	☒	AL, BE, BO, HA, WA
		DIN 51750- 2 (12.90)	☒	AL, BE, BO, HA, WA

4.2	**PCB, halogen (only in accordance with AltölV)**	**Annex 2 No. 2, 3**		
	PCB	**DIN EN 12766- 1 (11.00) in conjunction with DIN EN 12766- 2 (12.01), Method B**	☒	OP
	Total halogen (for AltölV only)	**Annex 2, No. 3 AltölV**	☒	OP

Test area 5: Landfill waste

	Sections/ Parameter	**Basis/** Method		**Locations**
		Section 6 (2), Section 8 (1), (3) and (5) DepV		
5.1	**Sampling**	**LAGA PN 98 (12.01)**	☒	AL, BO, HA

5.2	**Determination of total content in solid**			
	Sample preparation	**DIN 19747 (07.09)**	☒	AL, HA, OP
	Digestion method (aqua regia)	**DIN EN 13657 (01.03)**	☒	AL, HA, OP
	Loss on ignition	**DIN EN 15169 (05.07)**	☒	AL, HA, OP

	TOC (total organic carbon)	**DIN EN 13137 (12.01)**	☒	AL, OP
	BTEX (benzene and derivatives)	**DIN 38407-F9 (05.91) Handbuch Altlasten HLUG, Volume 7, Methods of analysis, Part 4 (2000)**	☒	AL, HA, OP
		DIN EN ISO 22155 (07.16)	☒	AL, HA, OP
	PCB (polychlorinated biphenyls)	**DIN EN 15308 (05.08)**	☒	AL, OP
	Petroleum hydrocarbons	**DIN EN 14039 (01.05) in conjunction with LAGA KW/04 (12.09)**	☒	AL, OP
	PAH (polycyclic aromatic hydrocarbons)	**DIN ISO 18287 (05.06)**	☒	AL, OP
	Density	**DIN 18125- 2 (03.11)**	☒	AL, BO
	Gross calorific value	**DIN EN 15170 (05.09)**	☒	OP
	Cadmium, chromium, copper, nickel, lead and zinc	**DIN ISO 11047 (05.03)**	☐	
		DIN EN ISO 11885 (09.09)	☒	AL, HA, OP
		DIN ISO 22036 (06.09)	☒	AL, HA, OP
	Mercury	**DIN EN 12846 (08.12)* a method incorrectly specified in legislation; DIN EN ISO 12846 (08.12) correct**	☒	AL, HA, OP
		DIN EN ISO 17852 (04.08)	☐	
	Extractable lipophilic substances	**LAGA KW/04 (12.09)**	☒	AL

5.3	**Determination of contents in eluate**			
	Eluate preparation with liquid/solid ratio 10/1	**DIN EN 12457- 4 (01.03)**	☒	AL, HA, OP
	Eluate preparation each with constant pH 4 and 11 / acid neutralisation capacity	**LAGA Guideline EW 98 (2002)**	☐	
	Up-flow percolation test	**DIN CEN/TS 14405 (09.04)**	☐	
		DIN 19528 (01.09)	☐	
	pH value of eluate	**DIN 38404- 5 (07.09)**	☒	AL, HA, OP
	DOC	**DIN EN 1484 (08.97)**	☒	AL, HA, OP
	DOC at a pH between 7.5 and 8	**LAGA Guideline EW 98 p (2002)**	☐	

	Phenols	**DIN 38409- 16 (06.84)**	☒	HA
		DIN EN ISO 14402 (12.99)	☒	AL, OP
		DIN 38407- 27 (10.12)	☐	
	Arsenic	**DIN EN ISO 11969 (11.96)**	☐	
		DIN EN ISO 11885 (09.09)	☒	AL, HA, OP
		DIN ISO 22036 (06.09)	☒	AL, HA, OP
		DIN EN ISO 15586 (02.04)	☐	
		DIN EN ISO 17294- 2 (02.05)	☒	AL, HA
		DIN EN ISO 17294-2 (01.17)	☒	AL, HA
	Lead, cadmium, copper, nickel, zinc, chromium	**DIN EN ISO 15586 (02.04)**	☐	
		DIN EN ISO 17294- 2 (02.05)	☒	AL, HA
		DIN EN ISO 11885 (09.09)	☒	AL, HA, OP
		DIN ISO 22036 (06.09)	☒	AL, HA, OP
		DIN EN ISO 17294-2 (01.17)	☒	AL, HA
	Mercury	**DIN EN ISO 12846 (08.12)**	☒	AL, HA, OP
		DIN EN ISO 17852 (04.08)	☐	
	Barium, molybdenum, selenium	**DIN ISO 22036 (06.09)**	☒	AL, HA, OP
		DIN EN ISO 11885 (09.09)	☒	AL, HA, OP
		DIN EN ISO 17294- 2 (02.05)	☒	AL, HA
		DIN EN ISO 17294-2 (01.17)	☒	AL, HA
	Antimony	**DIN ISO 22036 (06.09)**	☒	AL, HA, OP
		DIN EN ISO 11885 (09.09)	☒	AL, HA, OP
		DIN EN ISO 15586 (02.04)	☐	
		DIN 38405- 32 (05.00)	☐	
		DIN EN ISO 17294- 2 (02.05)	☒	AL, HA
		DIN EN ISO 17294-2 (01.17)	☒	AL, HA
	Total dissolved solids	**DIN EN 15216 (01.08)**	☒	AL, HA, OP
		DIN 38409- 1 (01.87)	☐	
		DIN 38409- 2 (03.87)	☐	
	Conductivity of eluate	**DIN EN 27888 (11.93)**	☒	AL, HA, OP

	Determination of dry residue	**DIN EN 14346 (03.07)**	☒	AL, HA, OP
	Chloride	**DIN EN ISO 10304- 1 (07.09)**	☒	AL, HA, OP
		DIN 38405- 1 (12.85)	☐	
		DIN EN ISO 15682 (01.02)	☐	
	Sulphate	**DIN EN ISO 10304- 1 (07.09)**	☒	AL, HA, OP
		DIN 38405- 5 (01.85)	☐	
	Cyanide, readily liberated	**DIN 38405- 13 (04.11)**	☐	
		In waste containing sulphide: **DIN ISO 17380 (05.06)**	☒	AL, OP
		DIN EN ISO 14403- 1 (10.12)	☐	
	Fluoride	**DIN 38405- 4 (07.85)**	☒	AL, OP
		DIN EN ISO 10304- 1 (07.09)	☒	AL, HA, OP

Section 5.4 - not used

Test area 6: Wood waste

	Sections/ Parameter	**Basis/** Method		**Location**
		AltholzV		
6.1	**Sampling and sample preparation**	**Section 6 (6) AltholzV**		
a)	**Sampling**	LAGA PN 98 in conjunction with **Annex IV No. 1.1, AltholzV**	☒	AL, BE, BO, HA, OP, RM, WA
b)	**Sample preparation**	DIN 19747 (07.09) in conjunction with **Annex IV No. 1.3**	☒	AL, OP
	Preparation of laboratory sample	DIN 19747 (07.09) in conjunction with **DIN 51701- 3 (08.85)**	☒	AL, OP
	Moisture content	**DIN 52183 (11.77)**	☒	AL, OP

6.2	**Heavy metals**	**Annex IV No. 1.4.3 AltholzV**		
	Aqua regia digestion	**E DIN EN 13657 (10.99)**	☒	AL, OP
		DIN EN 13657 (01.03)	☒	AL, OP
	Arsenic (from aqua regia digestion)	**DIN EN ISO 11969 (11.96)**	☐	
		DIN ISO 11047 (05.03)	☐	
		DIN EN ISO 11885 (09.09)	☒	AL, OP
		DIN EN ISO 22036 (06.09)	☒	AL, OP
		DIN EN ISO 17294- 2 (01.17)	☒	AL
	Lead (from aqua regia digestion)	**DIN 38406- 6 (07.98)**	☐	
		DIN EN ISO 11885 (04.98)	☒	AL, OP
		DIN ISO 11047 (05.98)	☐	
		DIN ISO 11047 (05.03)	☐	
		DIN EN ISO 17294- 2 (01.17	☒	AL
		DIN EN ISO 11885 (09.09)	☒	AL, OP
		DIN EN ISO 22036 (06.09)	☒	AL, OP
	Cadmium (from aqua regia digestion)	**DIN EN ISO 5961 (05.95)**	☐	
		DIN EN ISO 11885 (04.98)	☒	AL, OP
		DIN ISO 11047 (06.95)	☐	
		DIN ISO 11047 (05.03)	☐	
		DIN EN ISO 17294-2 (01.17)	☒	AL
		DIN EN ISO 11885 (09.09)	☒	AL, OP
		DIN EN ISO 22036 (06.09)	☒	AL, OP
	Chromium (from aqua regia digestion)	**DIN EN 1233 (08.96)**	☐	
		DIN EN ISO 11885 (04.98)	☒	AL, OP
		DIN ISO 11047 (06.95)	☐	
		DIN ISO 11047 (05.03)	☐	
		DIN EN ISO 17294-2 (01.17)	☒	AL
		DIN EN ISO 11885 (09.09)	☒	AL, OP
		DIN EN ISO 22036 (06.09)	☒	AL, OP

	Copper (from aqua regia digestion)	**DIN 38406- 7 (09.91)**	☐	
		DIN EN ISO 11885 (04.98)	☒	AL, OP
		DIN ISO 11047 (06.95)	☐	
		DIN ISO 11047 (05.03)	☐	
		DIN EN ISO 17294-2 (01.17)	☒	AL
		DIN EN ISO 11885 (09.09)	☒	AL, OP
		DIN EN ISO 22036 (06.09)	☒	AL, OP
	Mercury (from aqua regia digestion)	**DIN EN 1483 (08.97)**	☒	AL, OP
		DIN EN ISO 12338 (10.98)	☐	
		DIN EN ISO 12846 (08.12)	☒	AL, OP
		DIN EN ISO 17852 (04.08)	☐	

6.3	**Halogens**	**Annex IV No. 1.4.2 AltholzV**		
	Fluorine, chlorine	**DIN 51727 (06.01)**	☒	OP
		DIN 51727 (11.11)	☒	OP
		DIN EN 14582 (06.07) **in conjunction with DIN EN ISO 10304- 1 (04.95)**	☒	OP
		DIN EN ISO 10304- 1 (07.09)	☒	OP

6.4	**Organic parameters**	**Annex IV No. 1.4.4 and 1.4.5 AltholzV**		
	Pentachlorophenol (PCP)	**Annex IV AltholzV, No. 1.4.4**	☒	AL
		DIN ISO 14154 (12.05)	☒	AL
	Polychlorinated biphenyls (PCB)	**Annex IV AltholzV, No. 1.4.5 in conjunction with DIN 38414- 20 (01.96)**	☒	AL, OP

11 Sampling, sample preparation and analysis of waste in accordance with the German Landfill Ordinance, Annex 4 (July 2020)

DepV, Annex 4	Parameter	Section 8 (1), (3) and (5) DepV		Location
2	**Sampling**	LAGA PN 98 (May 2019)	☒	AL, BE, BO, BO[i], BR, DR, HA, HH, KO, MA, MÜ, OP, RM, WA
3	**Determination of total content in solid and elutable fraction**			
3.1	Determination of total content in solid			
3.1.1	Sample preparation	DIN 19747 (July 2009)	☒	AL, HA, MÜ, OP, RM, WA
3.1.2	Digestion method (aqua regia)	DIN EN 13657 (January 2003)	☒	AL, HA, MÜ, OP, RM, WA
3.1.3	Organic portion of the dry residue of the original substance			
3.1.3.1	Loss on ignition	DIN EN 15169 (May 2007)	☒	AL, HA, MÜ, OP, RM, WA
3.1.3.2	TOC (total organic carbon)	DIN EN 15936 (November 2012)	☒	AL, OP, WA
3.1.4	BTEX (benzene, toluene, ethylbenzene, o, m, p-xylene, styrene, cumene)	DIN EN ISO 22155 (July 2016)	☒	AL, HA, MÜ, OP, RM
3.1.5	CB (polychlorinated biphenyls - Sum of the 7 PCB congeners, PCB 28, 52, 101, 118, 138, 153, 180)	DIN EN 15308 (December 2016)	☒	AL, MÜ, OP, RM, WA
3.1.6	Petroleum hydrocarbons (C 10 to C 40)	DIN EN 14039 (January 2005) in conjunction with LAGA KW/04 (September 2019)	☒	AL, MÜ, OP, RM, WA
3.1.7	PAH (polycyclic aromatic hydrocarbons)	DIN ISO 18287 (May 2006)	☒	AL, MÜ, OP, WA
3.1.8	Density	DIN 18125-2 (March 2011)	☒	AL, BO, BO[i]
3.1.9	Gross calorific value	DIN EN 15170 (May 2009)	☒	OP

DepV, Annex 4	Parameter	Section 8 (1), (3) and (5) DepV		Location
3.1.10	Cadmium, chromium, copper, nickel, lead, zinc	DIN EN ISO 17294-2 (January 2017)	☒	AL, HA, MÜ, RM, WA
		DIN ISO 22036 (June 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 11885 (E 22) (September 2009)	☒	AL, HA, MÜ, OP
3.1.11	Mercury	DIN EN ISO 12846 (E 12) (August 2012)	☒	AL, HA, MÜ, OP, RM, WA
		DIN EN ISO 17852 (E 35) (April 2008)	☐	
3.1.12	Extractable lipophilic substances	LAGA KW/04 (September 2019)	☒	AL, MÜ, RM, WA
3.2	Determination of contents in eluate			
3.2.1	Eluate preparation			
3.2.1.1	Eluate preparation with liquid/solid ratio 10/1	DIN EN 12457-4 (January 2003)	☒	AL, HA, MÜ, OP, RM, WA
3.2.1.2	Eluate preparation each with constant pH 4 and 11 / acid neutralisation capacity	LAGA Guideline EW 98 (September 2017)	☒	WA
3.2.2	Up-flow percolation test	DIN 19528 (January 2009)	☒	AL, MÜ
		DIN EN 14405 (May 2017)	☐	
3.2.3	pH value of eluate	DIN EN ISO 10523 (April 2012)	☒	AL, HA, MÜ, OP, RM, WA
3.2.4	DOC (dissolved organic carbon)			
3.2.4.1	DOC	DIN EN 1484 (April 2019)	☒	AL, HA, MÜ, OP, RM
3.2.4.2	DOC at a pH between 7.5 and 8	LAGA Guideline EW 98 (September 2017)	☒	WA
3.2.5	Phenols	DIN 38409-H 16 (June 1984)	☒	HA
		DIN EN ISO 14402 (H 37) (December 1999)	☒	AL, MÜ, OP, RM, WA

DepV, Annex 4	Parameter	Section 8 (1), (3) and (5) DepV		Location
3.2.6	Arsenic	DIN EN ISO 17294-2 (January 2017)	☒	AL, HA, MÜ, RM, WA
		DIN EN ISO 11885 (E 22) (September 2009)	☒	AL, HA, MÜ, OP
		DIN ISO 22036 (June 2009)	☒	AL, HA, MÜ, OP
3.2.7	Lead	DIN EN ISO 17294-2, (January 2017)	☒	AL, HA, MÜ, RM, WA
		DIN ISO 22036 (June 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 11885 (E 22) (September 2009)	☒	AL, HA, MÜ, OP
3.2.8	Cadmium	DIN EN ISO 17294-2, (January 2017)	☒	AL, HA, MÜ, RM, WA
		DIN ISO 22036 (June 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 11885 (E 22) (September 2009)	☒	AL, HA, MÜ, OP
3.2.9	Copper	DIN EN ISO 17294-2, (January 2017)	☒	AL, HA, MÜ, RM, WA
		DIN ISO 22036 (June 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 11885 (E 22) (September 2009)	☒	AL, HA, MÜ, OP
3.2.10	Nickel	DIN EN ISO 17294-2, (January 2017)	☒	AL, HA, MÜ, RM, WA
		DIN ISO 22036 (June 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 11885 (E 22) (September 2009)	☒	AL, HA, MÜ, OP
3.2.11	Mercury	DIN EN ISO 12846 (E 12) (August 2012)	☒	AL, HA, MÜ, OP, RM
		DIN EN ISO 17852 (E 35) (April 2008)	☐	

DepV, Annex 4	Parameter	Section 8 (1), (3) and (5) DepV		Location
3.2.12	Zinc	DIN EN ISO 17294-2, (January 2017)	☒	AL, HA, MÜ, RM, WA
		DIN ISO 22036 (June 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 11885 (E 22) (September 2009)	☒	AL, HA, MÜ, OP
3.2.13	Chloride	DIN EN ISO 10304-1 (D 20) (July 2009)	☒	AL, HA, MÜ, OP, RM
		DIN EN ISO 15682 (D 31) (January 2002)	☐	
3.2.14	Sulphate	DIN EN ISO 10304-1 (D 20) (July 2009)	☒	AL, HA, MÜ, OP, RM
3.2.15	Cyanide, readily liberated	DIN 38405-D 13 (April 2011)	☐	
		In waste containing sulphide: DIN ISO 17380 (May 2006)	☒	AL, MÜ, OP, RM, WA
		DIN EN ISO 14403-1 (D 2) (October 2012)	☐	
		DIN EN ISO 14403-2, (October 2012)	☒	AL, MÜ, OP, RM, WA
3.2.16	Fluoride	DIN 38405-D 4 (July 1985)	☒	AL, MÜ, OP
		DIN EN ISO 10304-1 (D 20) (July 2009)	☒	AL, HA, MÜ, OP, RM
3.2.17	Barium	DIN ISO 22036 (June 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 11885 (E 22) (September 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 17294-2 (E 29) (January 2017)	☒	AL, HA, MÜ, RM, WA
3.2.18	Chromium, total	DIN ISO 22036 (June 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 11885 (E 22) (September 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 17294-2 (January 2017)	☒	AL, HA, MÜ, RM, WA

DepV, Annex 4	Parameter	Section 8 (1), (3) and (5) DepV		Location
3.2.19	Molybdenum	DIN ISO 22036 (June 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 11885 (E 22) (September 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 17294-2 (E 29) (January 2017)	☒	AL, HA, MÜ, RM, WA
3.2.20	Antimony	DIN ISO 22036 (June 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 11885 (E 22) (September 2009)	☒	AL, HA, MÜ, OP
		DIN 38405-D 32 (May 2000)	☐	
		DIN EN ISO 17294-2 (E 29) (January 2017)	☒	AL, HA, MÜ, RM, WA
3.2.21	Selenium	DIN ISO 22036 (June 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 11885 (E 22) (September 2009)	☒	AL, HA, MÜ, OP
		DIN EN ISO 17294-2 (E 29) (January 2017)	☒	AL, HA, MÜ, RM, WA
3.2.22	Total dissolved solids	DIN EN 15216 (January 2008)	☒	AL, HA, MÜ, OP, RM, WA
		DIN 38409-H 1 (January 1987)	☐	
		DIN 38409-H 2 (March 1987)	☐	
3.2.23	Conductivity of eluate	DIN EN 27888 (C 8) (November 1993)	☒	AL, HA, MÜ, OP, RM, WA
3.2.24	Determination of dry residue	DIN EN 14346 (March 2007)	☒	AL, HA, MÜ, OP, WA
3.3	Biodegradability of the dry residue of the original substance			
3.3.1	Breathability over 4 days (AT_4)		☒	AL
3.3.2	Gas formation rate in fermentation test over 21 days (GB_{21})		☐	

12 Sampling and analysis of airborne pollutants ***

For the sampling part of the indoor air tests listed below, the requirements of the sampling strategies DIN EN 16000-1, (general aspects), 2 (formaldehyde), 5 (VOCs), 12 (PCBs, PCDDs/PCDFs) and 19 (moulds) in their respective current versions are fulfilled

12.1 Determination of indoor pollutants

DIN ISO 16000-3 2013-01	Indoor air - Part 3: Determination of formaldehyde and other carbonyl compounds in indoor air and in test chambers - Pumped sampling	AL (PN), BE (PN), BO[i] (PN), BR (PN), HA (PN+Mess), HH (PN), KO (PN), MA (PN), MÜ (PN), OP (PN)
DIN ISO 16000-6 2012-11	Indoor air - Part 6: Determination of volatile organic compounds in indoor air test chamber air by active sampling on TENAX TA® sorbent, thermal desorption and gas chromatography with MS or MS-FID	AL (PN+Mess), BE (PN), BO[i] (PN), BR (PN), HH (PN), KO (PN), HA (PN), MA (PN), MÜ (PN), OP (PN)
DIN ISO 16000-13 2010-03	Indoor air - Part 13: Determination of total (gas and particle-phase) polychlorinated dioxin-like biphenyls (PCBs) and polychlorinated dibenzo-p-dioxins/dibenzofurans (PCDDs/PCDFs) - Collection on sorbent-backed filters (Restriction: *Sampling only*)	AL (PN), BE (PN), BO[i] (PN), BR (PN), HA (PN), HH (PN), KO (PN), MA (PN), MÜ (PN), OP (PN)

DIN ISO 16000-16 2009-12	Indoor air - Part 16: Detection and enumeration of moulds - Samplir by filtration	AL (PN), BE (PN), BO[i] (PN), BR (PN), HA (PN), HH (PN), KO (PN), MA (PN), MÜ (PN), OP (PN)
VDI 2100 sheet 2 2010-11	Determination of gaseous compounds in ambient air - Determination of indoor air pollutants - Gas chromatographic determination of organic compounds - Active sampling by enrichment on activated carbon - Solvent extraction	AL (PN), BE (PN), BO[i] (PN), BR (PN), HA (PN), HH (PN), KO (PN), MA (PN), MÜ (PN), OP (PN)
VDI 2464 sheet 1 2009-09	Ambient air measurement - Indoor air measurement - Measurement of polychlorinated biphynyls (PCBs) - GC/MS method for PCB 28, 52, 101, 138, 153, 180	AL (PN+Mess), BE (PN), BO[i] (PN), BR (PN), HA (PN), HH (PN), KO (PN), MA (PN), MÜ (PN), OP (PN)
VDI 4301 sheet 2 2000-06	Indoor air pollution measurement - Measurement of pentaclorphenol (PCP) and γ-hexachlorcyclohexane (lindane) - GC/MS-method (Modification: *Also organochlorine pesticides and chlorobenzenes*)	AL (PN+Mess), BE (PN), BO[i] (PN), HA (PN), HH (PN), KO (PN), MA (PN), MÜ (PN), OP (PN)

DFG 1 1978-12	Chlorinated biphenyls (screening method for the initial collection of PCB contaminations)	AL (PN+Mess), BE (PN), BO[i] (PN), BR (PN), HA (PN), HH (PN), KO (PN), MA (PN), MÜ (PN), OP (PN)

12.2 Analysis of building materials and other material samples, test chamber analysis

DIN ISO 16000-3 2013-01	Indoor air - Part 3: Measurement of formaldehyde and other carbonyl compounds - Sampling with a pump	AL (PN), HA (Mess)
DIN ISO 16000-6 2012-11	Indoor air - Part 6: Determination of volatile organic compounds in indoor air test chamber air by active sampling on TENAX TA® sorbent, thermal desorption and gas chromatography with MS or MS-FID	AL (PN+Mess)
DIN ISO 16000-21 2014-05	Indoor air - Part 21: Detection and enumeration of moulds - Sampling of materials (Restriction: *Sampling only*)	AL (PN), BE (PN), BO[i] (PN), BR (PN), HA (PN), HH (PN), KO (PN), MA (PN), MU (PN), OP (PN)
DIN EN 16516 2020-10	Construction products - Assessment of release of dangerous substances - Determination of emissions into indoor air	AL (PN+Mess)
VDI 3878 2017-09	Stationary source emissions - Measurement of ammonia (and gaseous ammonium compounds) - Manual method	AL (Mess)

WES 101 2007-02	Sampling of building stock (Material sampling of building materials for analysis of chemical and biological pollutants)	AL (PN), BE (PN), BO[i] (PN), BR (PN), HA (PN), HH (PN), KO (PN), MA (PN), MÜ (PN), OP (PN)

12.3 Sampling of soil gas and determination of hazardous substances in soil gas and landfill gases

DIN ISO 10381-7 2007-10	Soil quality - Sampling - Part 7: Guidance on sampling of soil gas	AL (PN), BE (PN), BO (PN), BO[i] (PN), HA (PN), OP (PN), WA (PN)
VDI 3860 sheet 1 2006-05	Measurement of landfill gas - Principles	BE (PN), HA (PN), OP (PN), WA (PN)
VDI 3860 sheet 2 2008-02	Measurement of landfill gases - Measurements in the gas collection system	HA (PN), OP (PN)
VDI 3865 sheet 1 2005-06	Measurement of organic soil pollutants - Planning of measurements for the determination of volatile organic compounds in soil gas	AL, (PN), BE (PN), BO (PN), BO[i] (PN), HA (PN), OP (PN), WA (PN)
VDI 3865 sheet 2 1998-01	Measurement of organic soil pollutants - Techniques of active sampling of soil gas	AL (PN), BE (PN), BO (PN), BO[i] (PN), HA (PN), OP (PN), WA (PN)

VDI 3865 sheet 3 1998-06	Measurement of organic soil pollutants - Gas-chromatographic determination of volatile organic compounds in soil gas adsorption at activated carbon and desorption with organic solvents	RM (Mess)
VDI 3865 sheet 4 2000-12	Measurement of organic soil pollutants - Gas chromatographic determination of volatile organic compounds in soil gas - Direct measurement	AL (Mess), MÜ (Mess), RM (Mess)
VDI 3878 2017-09	Stationary source emissions - Measurement of ammonia (and gaseous ammonium compounds) - Manual method	AL (Mess)

12.4 Areas of activity regulated by immission control law ***

Measurement procedure as per immission control module and Annex A2 to VDI 4220.
The fulfilment of the requirements of CEN/TS 15675:2007 is hereby confirmed.

The requirements for emission measurements in accordance with DIN EN 15259:2008 (Measurement of stationary source emissions - Requirements for measurement sections and sites and for the measurement objective, plan and report) are fulfilled.

Test area group I.1:	**Determination of emissions (air)** **Sections 26, 28 BImSchG and corresponding measurement tasks in accordance with ordinances on the implementation of BImSchG**		
Component	**Standard / Guideline / Technical rule**	**SRM**	**Comments Location**
General	**Reference variables and flue gas boundary conditions**		
Water vapour	DIN EN 14790 2017-05	☒	BE (PN), BO (PN)
Oxygen	DIN EN 14789 2017-05	☒	BE (PN), BO (PN)
Volume flow	DIN EN ISO 16911-1 2013-06	☒	BE (Mess+PN), BO (Mess+PN)
Temperature	VDI 3511 Sheet 1 1996-03	☒	BE (Mess+PN), BO (Mess+PN)
Carbon dioxide	DIN CEN/TS 17405 2020-11	☒	BE (PN), BO (PN)

Test area group I.1:	Determination of emissions (air) Sections 26, 28 BImSchG and corresponding measurement tasks in accordance with ordinances on the implementation of BImSchG		
Component	**Standard / Guideline / Technical rule**	**SRM**	**Comments Location**
ID P:	**Particulate and chemical substances adsorbed on particles**		
Total dust at low dust concentrations	DIN EN 13284-1 2018-02	☒	BE (Mess+PN), BO (Mess+PN)
Dust constituents or compounds adsorbed to dust, including filterable fractions			
Arsenic (As)	DIN EN 14385 2004-05	☒	BE (PN), BO (PN), AL (Mess)
Cadmium (Cd)	DIN EN 14385 2004-05	☒	BE (PN), BO (PN), AL (Mess)
Nickel (Ni)	DIN EN 14385 2004-05	☒	BE (PN), BO (PN), AL (Mess)
Lead (Pb)	DIN EN 14385 2004-05	☒	BE (PN), BO (PN), AL (Mess)
Mercury (Hg)	DIN EN 13211 2001-06 and Corrigendum 2005-06	☒	BE (PN), BO (PN), AL (Mess)
ID G	**Gaseous inorganic and organic substances**		
NO_x	DIN EN 14792 2017-05	☒	BE (PN), BO (PN)
CO	DIN EN 15058 2017-05	☒	BE (PN), BO (PN)
SO_X	DIN EN 14791 2017-05	☒	BE (PN), BO (PN), AL (Mess)
HCl and HF	DIN EN 1911 2010-12 DIN CEN/TS 17340 2021-01	☒ ☒	BE (PN), BO (PN), AL (Mess)

Test area group I.1:	Determination of emissions (air) Sections 26, 28 BImSchG and corresponding measurement tasks in accordance with ordinances on the implementation of BImSchG		
Component	**Standard / Guideline / Technical rule**	**SRM**	**Comments Location**
Total C (organic)	DIN EN 12619 2013-04	☒	BE (PN), BO (PN)
Aldehydes/ketones (e.g. formaldehyde)	VDI 3862 sheet 2 2000-12	☒	BE (PN), BO (PN), HA (Mess)
Ammonia (NH3) (only mandatory for group II.1)	VDI 3878 2017-09	☒	BE (PN), BO (PN), AL (Mess)
BTX	DIN CEN TS 13649 2015-03	☒	BE (PN), BO (PN), OP (Mess)
HCN	VDI 2470 sheet 1 1975-10 Analysis as per DIN 38405-13 2011-04	☒	BE (PN), BO (PN), AL (Mess)
H2S	VDI 3486 sheet 2 1979-04	☒	BE (PN), BO (PN + Mess)
Cl2	VDI 3488 sheet 1 1979-12	☒	BE (PN), BO (PN), AL (Mess)
Additional components as part of determination of emissions			
HBr	DIN EN 1911 2010-12	☒	BE (PN), BO (PN), AL (Mess)
PAH	VDI 3874 2006-12	☒	BE (PN), BO (PN), AL (Mess)
Dust, Filter head unit	VDI 2066 sheet 1 2006-11	☒	BE (PN+Mess), BO (Mess+PN)
Soot	VDI 2066 sheet 8 1995-09	☒	BE (Mess+PN)

Test area group I.1:	Determination of emissions (air) Sections 26, 28 BImSchG and corresponding measurement tasks in accordance with ordinances on the implementation of BImSchG		
Component	**Standard / Guideline / Technical rule**	**SRM**	**Comments Location**
Metals (Be, Co, Cr, Cu, Mn, Sb, Se, Sn, Te, Tl, V, Zn)	DIN EN 14385 2004-05	☒	BE (PN), BO (PN), AL (Mess)
Formaldehyde	VDI-3862 sheet 4 2001-05	☒	BE (PN), BO (PN+Mess)
Amines	DIN CEN/TS 13649 2015-03	☐	BO (PN+Mess)
N2O continuous	DIN EN 21258 2010-11	☒	BE (PN), BO (PN)
ID Sp	**Special sampling of substances requiring additional effort for sampling or analysis**		
Methods of sampling for determination of the single isomers of PCDD/PCDF and of dioxin-like PCBs	DIN EN 1948-1 2006-06	☒	BE (PN), BO (PN)
PAH	DIN EN 1948-1 2006-06 (Modification: *Also for PAH sampling*)	☒	BE (PN), BO (PN)
ID Sa	**Special analysis of substances requiring additional effort for sampling or analysis**		
Methods of analysis for determination of the single isomers of PCDD/PCDF and of dioxin-like PCBs	DIN EN 1948 Part 2 2006-06 Part 3 2006-06 Part 4 2014-03	☒	AL (Mess)

Test area group I.2:	Determination of emissions (air) as per no. I.1 and measurement tasks that require special technical equipment and specific experience of specialist personnel		
Component	**Standard / Guideline / Technical rule**	**SRM**	**Comments Location[5]**
ID G			
Measurement of the combustion chamber temperature/ determination of the dwell time in the afterburning zone	Bundeseinheitliche Praxis bei der Überwachung der Emissionen (German federal uniform practice for the monitoring of emissions) 2017-01	☒	BE (PN)

Test area group II.1:	Verification of proper installation and function and calibration of continuous emission measuring equipment Verification and calibration of measuring equipment on installations that require technical equipment and knowledge and experience		
Component	**Standard / Guideline / Technical rule**	**SRM**	**Comments Location[5]**
Mandatory methods for the IDs P and G			
Exhaust gas velocity	DIN EN 16911-1 2013-06 DIN EN 16911-2 2013-06	☒	BE (PN), BO (PN)
Volume flow	DIN EN 16911-1 2013-06 DIN EN 16911-2 2013-06	☒	BE (PN), BO (PN)
Oxygen	DIN EN 14789 2017-05	☒	BE (PN), BO (PN)
Water vapour	DIN EN 14790 2017-05	☒	BE (PN), BO (PN)
Verification of functionality	VDI 3950 2018-06 DIN EN 14181 2015-02	☒	BE (PN), BO (PN)

Test area group II.1:	Verification of proper installation and function and calibration of continuous emission measuring equipment Verification and calibration of measuring equipment on installations that require technical equipment and knowledge and experience		
Component	**Standard / Guideline / Technical rule**	**SRM**	**Comments Location[5]**
Verification of leaktightness	VDI 3950 2018-06 DIN EN 14181 2015-02	☒	BE (PN), BO (PN)
Verification of device characteristic	VDI 3950 2018-06 DIN EN 14181 2015-02	☒	BE (PN), BO (PN)
Verification of measured value registration, processing and transfer	VDI 3950 2018-06 DIN EN 14181 2015-02	☒	BE (PN), BO (PN)
Determination of cross-sensitivity	VDI 3950 2018-06 DIN EN 14181 2015-02	☒	BE (PN), BO (PN)
Determination of setup time	VDI 3950 2018-06 DIN EN 14181 2015-02	☒	BE (PN), BO (PN)
Determination of zero and reference point drift	VDI 3950 2018-06 DIN EN 14181 2015-02	☒	BE (PN), BO (PN)
Determination of calibration function	VDI 3950 2018-06 DIN EN 14181 2015-02	☒	BE (PN), BO (PN)

Test area group II.2:	Verification and calibration of emission measuring equipment as set out in II.1 and verification and calibrations of measuring equipment at installations that require special equipment and specific experience of specialist personnel		
Component	**Standard / Guideline / Technical rule**	**SRM**	**Comments Location[5]**
ID G			
Calibration of combustion chamber temperature measuring equipment	BEP 2017-01	☒	BE (PN)
Dust	DIN EN 13284-2 2018-02	☒	BE (PN), BO (PN
Mercury (Hg)	DIN EN 14884 2006-03	☒	BE (PN), BO (PN)

12.5 Methods for the determination and assessment of concentrations of dangerous substances in air in work areas ***

Group 1 **Aerosols (without fibrous dusts)**	**Standard title**	**Standard** **Issue date**	**QM document**	**Comments/** **Location**
Section/ *Component*			**VA /AA**	
Dust mass determination				
Alveolar dust fraction	Alveolar dust fraction	IFA 6068 2015-05	IV-Div-CD-3.7 IV-Div-CD-3.19	BE (PN+Mess), BO (PN+Mess)
Inhalable dust fraction	Inhalable dust fraction	BIA 7284 2003-10	IV-Div-CD-3.7 IV-Div-CD-3.20	BE (PN+Mess), BO (PN+Mess)
Wood dust	Wood dust	IFA 7630 2011-11	IV-Div-CD-3.7 IV-Div-CD-3.20	BE (PN+Mess), BO (PN+Mess)

Group 1 Aerosols (without fibrous dusts)	Standard title	Standard Issue date	QM document	Comments/ Location
Section/ *Component*			VA /AA	
Metals and metal compounds	Elements	IFA 7808 2020-11 OHSA 121 2002-02	IV-Div-CD-3.20 V-ENV-AL-3.204	BE (PN), BO (PN), AL (Mess)
	Chromium	BGIA 6645 2001-10	IV-Div-CD-3.20 V-ENV-AL-3.204	BE (PN), BO (PN), AL (Mess)
	Lead and its compounds	IFA 6310 2016-10	IV-Div-CD-3.20 V-ENV-AL-3.204	BE (PN), BO (PN), AL (Mess)
	Chromium(VI) compounds	IFA 6665 2014-10	IV-Div-CD-3.20 V-ENV-AL-3.191	BE (PN), BO (PN), AL (Mess)
	Mercury	NIOSH 6009 1994-08	IV-Div-CD-3.20	BE (PN)
Crystalline mineral dusts	Quartz	BGIA 8522 2005-04	IV-Div-CD-3.20	BE (PN), BO (PN)

Group 2 Fibrous dusts	Standard title	Standard	QM document	Comments Location
Section/ *Component*			VA /AA	
Asbestos fibres	Method for the separate determination of respirable asbestos fibres and other inorganic fibres - SEM method	BGIA 7485 2009-05 BGI-GUV-I-505.46 2014-02	IV-Div-CD-3.30 V-Div-CD-BO-3.013	BO (Mess), BO (PN)
Other fibre dusts	Method for the separate determination of respirable fibres in work areas - SEM method	BGIA 7485 2009-05 BGI-GUV-I-505.46 2014-02	IV-Div-CD-3.30 V-Div-CD-BO-3.013	BO (Mess), BO (PN)

Group 3 Inorganic gases and vapours	Standard title	Standard	QM document	Comments Location
Section/ *Component*			VA /AA	
Hydrogen halides and other inorganic acids	Inorganic acids, volatile: Hydrogen bromide, hydrogen chloride, nitric acid	BGIA 6172 2007-04	IV-Div-CD-3.20 V-ENV-AL-3.206	BE (PN), BO (PN), AL (Mess)
	Hydrogen cyanide and cyanides	IFA 6725 2012-11	IV-Div-CD-3.22	BO (PN)
	Inorganic acids, particulate: Phosphoric acid, sulphuric acid	IFA 6173 2016-05	IV-Div-CD-3.20 V-ENV-AL-3.206	BE (PN), BO (PN), AL (Mess)
	Fluorides and hydrogen fluoride	BGIA 7512 2006-05	IV-Div-CD-3.20 V-ENV-AL-3.206	BE (PN), BO (PN), AL (Mess)
Other volatile hydrogen compounds	Ammonia	BGIA 6150 2009-05 DFG 1 Section 11.6.3 2007	IV-Div-CD-3.20 V-ENV-AL-3.205	BE (PN), BO (PN), AL (Mess)

Group 4 (Organic gases and vapours)	Standard title	Standard	QM document	Comments Location
Section/ ***Component***			VA /AA	
Aliphatic and aromatic hydrocarbons	Hydrocarbons, aliphatic	IFA 7732 2011-11	IV-Div-CD-3.22 V-ENV-OP-3.042	BE (PN), BO (PN), OP (Mess)
	Hydrocarbons, aromatic	BGIA 7733 2005-04	IV-Div-CD-3.22 V-ENV-OP-3.042	BE (PN), BO (PN), OP (Mess)
	Benzene	IFA 6265 2013-10	IV-Div-CD-3.22 V-ENV-OP-3.042	BE (PN), BO (PN), OP (Mess)
	Hydrocarbon mixtures - RCP	BGIA 7735 2009-11	IV-Div-CD-3.22	BE (PN), OP (Mess)
Volatile halogenated hydrocarbons	Chlorinated hydrocarbons, aliphatic I	BGIA 6600 2006-10	IV-Div-CD-3.22 V-ENV-OP-3.042	BE (PN), BO (PN), OP (Mess)
Ketones and esters	Ketones	BGIA 7708 2005-04	IV-Div-CD-3.22 V-ENV-OP-3.042	BE (PN), BO (PN), OP (Mess)
	Acetic acid esters (e.g. ethyl acetate)	BGIA 7322 2009-05	IV-Div-CD-3.22 V-ENV-OP-3.042	BE (PN), BO (PN), OP (Mess)

Group 4 (Organic gases and vapours)	Standard title	Standard	QM document	Comments Location
Section/ *Component*			VA /AA	
Alcohols	2-butanol, ethanol, 1-propanol, 2-propanol, 1-butanol, 2-methyl-1-propanol, 2-methyl-2-propanol, cyclohexanol	BIA 6386 1997-04 BIA 7330 1997-04 BIA 8415 1997-04	IV-Div-CD-3.22 V-ENV-OP-3.042	BE (PN), BO (PN), OP (Mess)
	Methanol	IFA 7810 2015-10	IV-Div-CD-3.22 V-ENV-OP-3.042	BE (PN), BO (PN), OP (Mess)
Aldehydes	Aldehydes	BGIA 6045 2009-11	IV-Div-CD-3.22 V-ENV-HA-3.079	BE (PN), BO (PN), HA (Mess)
Phenols	Phenol, o-, m- and p-cresol	BGIA 8330 2016-05	IV-Div-CD-3.22 V-ENV-OP-3.042	BE (PN), BO (PN), OP (Mess)
Organic acids	Acetic acid, formic acid, propionic acid	IFA 6550 2020-11 BIA 6070 1993-10 BIA 7320 1993-10	IV-Div-CD-3.22	BE (PN)
Additional sections / components	Nicotine	BGIA 8108 2008-10	IV-Div-CD-3.22	BE (PN)

Group 5 Selected parameters	Standard title	Standard	QM document	Comments Location
Section/ *Component*			VA /AA	
Multi-component systems	Cooling lubricants	BIA 7750 1997-11	IV-Div-CD-3.20	**BO (PN),** BE (PN)
	Diisocyanates, monomeric (2,4-TDI, 2,6-TDI, 2,4'-MDI, 2,6'-MDI, HDI, IPDI and NDI), isocyanates	BGIA 7120 2010-12 BGIA 7670 2009-11	IV-Div-CD-3.20 V-ENV-HA-3.080	BE (PN), BO (PN), HA (Mess)
Diesel engine emissions (DME)	Diesel engine emissions	BGI 505-44 V2 1995	IV-Div-CD-3.19	BE (PN), **BO (PN)**

13 Sampling and analysis of inorganic fibrous particles using scanning electron microscopy ***

Flexible scope: BO *

DIN ISO 16000-27 2014-11	Indoor air - Part 27: Determination of settled fibrous dust on surfaces by SEM	AL (PN), BE (PN), BO (Mess), BO[i] (PN), BR (PN), HA (PN), HH (PN), KO (PN), MA (PN), MÜ (PN), OP (PN)
BGI-GUV-I-505.46 (ZH1/120.46) 2014-02	Method for the separate determination of respirable asbestos fibres and other inorganic fibres - SEM method	BO (Mess)
BIA 7487/TRGS 517 2003-10	Method for analytical determination of low mass contents of asbestos fibres in powders and dusts with REM/EDX	HA (PRV), BO (Mess)
BIA 7488 / TRGS 905 2007-04	Determination of the CI value of amorphous mineral fibres	BO (Mess)
VDI 3492 2013-06	Measurement of indoor air pollution - Ambient air measurement - Measurement of inorganic fibrous particles - Scanning electron microscopy method	AL (PN), BE (PN), BO (Mess), BO[i] (PN), BR (PN), HA (PN), HH (PN), KO (PN), MA (PN), MÜ (PN), OP (PN)

VDI 3866 sheet 1 2000-12	Determination of asbestos in technical products - Principle - Sampling and sample preparation	AL (PN), BE (PN), BO (PRV), BO^{i} (PN), BR (PN), HA (PN), HH (PN), KO (PN), MA (PN), MÜ (PN), OP (PN)
VDI 3866 sheet 5 2017-06	Determination of asbestos in technical products - Scanning electron microscopy method	BO (Mess)
VDI 3876 2018-11	Measurement of asbestos in construction and demolition waste and recycling materials produced thereof Sample preparation and analysis	BO (Mess)
VDI 3877 sheet 1 2011-09	Indoor air pollution - Measurement of fibrous dust settled on surfaces - Sampling and analysis (REM/EDXA)	AL (PN), BE (PN), BO (Mess), BOi (PN), BR (PN), HA (PN), HH (PN), KO (PN), MA (PN), MÜ (PN), OP (PN)
WES 082 2012-10	Identification and determination of asbestos contamination in dust and soil samples, semi-quantitative; scanning electron microscopy method	BO (Mess)
WES 085 2004-09	Analysis of samples of unknown dust and solids for their chemical composition; scanning electron microscopy method	BO (Mess)

14 Sampling and determination of polyhalogenated dioxins and furans in water, waste, soil, foodstuffs and feedstuffs by HRGC/HRMS and HRGC-MS/MS

14.1 Sampling of foodstuffs and feedstuffs ***

Regulation (EU) 252/2012 Annex II Last amended 21/03/2012	Commission Regulation (EU) No 252/2012 of 21 March 2012 laying down methods of sampling and analysis for the official control of levels of dioxins, dioxin-like PCBs and non-dioxin-like PCBs in certain foodstuffs and repealing Regulation (EC) No 1883/2006 - Methods of sampling for offical control of levels of dioxins (PCDD/PCDF), dioxin-like PCBs and non-dioxin-like PCBs in certain foodstuffs	AL
Regulation (EU) 2017/644 Annex II Last amended 05/04/2017	Commission Regulation (EU) No 2017/644 of 5 April 2017 laying down methods of sampling and analysis for the control of levels of dioxins, dioxin-like PCBs and non-dioxin-like PCBs in certain foodstuffs and repealing Regulation (EU) No 589/2014 - Methods of sampling for official control of levels of dioxins (PCDD/PCDF), dioxin-like pcbs and non-dioxin-like PCBs in certain foodstuffs	AL
Regulation (EC) 152/2009 Annex I Last amended 27.10.2020	Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed - Methods of sampling	AL

14.2 Determination of polyhalogenated dioxins and furans in water, waste, soil, foodstuffs and feedstuffs by HRGC/HRMS and HRGC-MS/MS *

DIN 38407-F 3 1998-07	Gas chromatographic determination of polychlorinated biphenyls	AL
DEV F 33 2002	Determination of polychlorinated dibenzodioxins (PCDD) and polychlorinated dibenzofurans (PCDF)	AL
DIN 38414-S 24 2000-10	Determination of polychlorinated dibenzodioxins (PCDD) and polychlorinated dibenzofurans (PCDF) (Modification: *Also for soils, extraction of air-dried or freeze-dried samples*)	AL

DIN EN 16190 2019-10	Soil, treated biowaste and sludge - Determination of dioxins and furans and dioxin-like polychlorinated biphenyls by gas chromatography with high resolution mass selective detection (HR GC-MS)	AL
VDI 3498 sheet 2 2002-07	Ambient air measurement - Indoor air measurement - Measurement of polychlorinated dibenzo-p-dioxins and dibenzofurans; Method using small filters	AL
AbfKlärV Annex 2 2017-09	Determination of polychlorinated dibenzodioxins (PCDD) and polychlorinated dibenzofurans (PCDF)	AL
EPA Method 1613 1994-10	Tetra-Through Octa-Chlorinated Dioxins and Furans by Isotope Dilutions HRGC/HRMS (Modification: *Also dioxin-like PCBs*) (Modification: *Also in wipe samples and foodstuffs*)	AL
Regulation (EU) 2017/644 Annex III 2017-04	Commission Regulation (EU) No 2017/644 of 5 April 2017 laying down methods of sampling and analysis for the control of levels of dioxins, dioxin-like PCBs and non-dioxin-like PCBs in certain foodstuffs and repealing Regulation (EU) No 589/2014 - Sample preparation and requirements for methods of analysis used in control of the levels of dioxins (PCDD/FS) and dioxin-like PCBs in certain foodstuffs	AL
Regulation (EU) 2017/644 Annex IV 2017-04	Commission Regulation (EU) No 2017/644 of 5 April 2017 laying down methods of sampling and analysis for the control of levels of dioxins, dioxin-like PCBs and non-dioxin-like PCBs in certain foodstuffs and repealing Regulation (EU) No 589/2014 - Sample preparation and requirements for methods of analysis used in control of the levels of non-dioxin-like PCBs in certain foodstuffs	AL
Regulation (EC) 152/2009 Annex II Part A Last amended 27.10.2020	Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed - Annex II General provisions on methods of analysis for feed - Part A Preparation of samples for analysis	AL

Regulation (EC) 152/2009 Annex V, Part B Last amended 27.10.2020	Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the methods of sampling and analysis for the official control of feed - Annex V Methods of analysis to control undesirable substances in feed - Part B Determination of the levels of dioxins (PCDD/PCDF) and dioxin-like PCBs)	AL
ASU F 0027 2019-06	Analysis of foodstuffs Determination of the levels of dioxins and polychlorinated biphenyls in feed - Commission Regulation (EU) 2017/771 of 03 May 2017 amending Regulation (EC) No 152/2009 (OJ EC L 115/22 of 04.05.2017)	AL

15 Biological analysis of surface, ground, seepage and waste water, waste, organic fertilisers, soil improvers, substrates, compost and aqueous eluates as well as determination of the biodegradability of chemical substances ***

DIN EN ISO 6341 2013-01	Water quality - Determination of the inhibition of the mobility of Daphnia magna Straus (Cladocera, Crustacea) - Acute toxicity test	AL
DIN EN ISO 9888 1999-11	Water quality - Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium - Static test (Zahn-Wellens method)	AL
DIN EN ISO 11348-2 2009-05	Water quality - Determination of the inhibitory effect of water samples on the light emission of Vibrio fischeri (Luminescent bacteria test) - Part 2: Method using liquid-dried bacteria	AL
DIN EN ISO 15088 2009-06	Water quality - Determination of the acute toxicity of waste water to zebrafish eggs (Danio rerio)	AL
DIN 38409-60 2019-12	Spectrometric determination of the chlorophyll-a concentration in water	AL
DIN 38412-30 1989-03	Determination of the tolerance of Daphnia to the toxicity of waste water by way of a dilution series	AL
BGK e.V.; Section II. C 1-3 Corrigendum 2020-01	Stones and foreign matter in organic fertilisers, soil improvers and substrates	AL
BGK e.V.; Section II. C 1-3 Corrigendum 2015-12	Cumulative sum of foreign matter in organic fertilisers, soil improvers and substrates	AL

DepV, Annex 4, No.3.3.1 2009-04	Biodegradability of the dry residue of the original substance, breathability (AT4)	AL
Methodenbuch BGK Section IV, A3 2006-09	Plant tolerance in seed planting test with spring barley	AL
Methodenbuch BGK Section IV, B 1 2006-09	Viable seeds and parts of plants capable of producing shoots	AL

16 Microbiological analysis of bacteria, yeasts and moulds using cultural methods in drinking water (outside the scope of the German Drinking Water Ordinance), mineral, spring and bottled water, process water, industrial water, raw water, swimming pool and bathing pool water, drinking water, groundwater and surface water, bathing waters, organic fertilisers, soil improvers, topsoil and growing media, compost, indoor air, foodstuffs, feedstuffs, environmental samples, commodities and cosmetics ***

16.1 Microbiological analysis of bacteria using cultural methods in drinking water (outside the scope of the German Drinking Water Ordinance), mineral, spring and bottled water, process water, industrial water, raw water, swimming pool and bathing pool water, drinking water, groundwater and surface water and bathing waters *

DIN EN ISO 6222 (K 5) 1999-07	Water quality - Enumeration of culturable micro-organisms - Colony count by inoculation in a nutrient agar culture medium	AL, OP, WA
DIN EN ISO 9308-2 (K 6-1) 2014-06	Water quality - Enumeration of Escherichia coli and coliform bacteria - Part 2: Most probable number method	OP, WA
DIN EN ISO 16266 (K 11) 2008-05	Water quality - Detection and enumeration of Pseudomonas aeruginosa - Membrane filtration method	AL
DIN EN ISO 9308-1 (K 12) 2017-09	Water quality - Detection and enumeration of Escherichia coli and coliform bacteria - Part 1: Membrane filtration method for waters with low bacterial background flora	AL, OP, WA
DIN EN ISO 7899-2 (K 15) 2000-11	Water quality - Detection and enumeration of intestinal enterococci - Part 2: Membrane filtration method	AL, OP, WA

DIN EN ISO 19250 (K 18) 2013-06	Water quality - Determination of Salmonella spp. (Modification: *Confirmation using MALDI-TOF*)	AL
DIN EN ISO 11731 (K 23) 2019-03	Water quality - Detection and enumeration of Legionella	AL, OP, WA
DIN EN ISO 14189 (K 24) 2016-11	Water quality - Enumeration of Clostridium perfringens - Method using membrane filtration	AL
Min/TafelWV, Annex 2, Section 2 b Last amended 05.07.2017	Ordinance on natural mineral water, spring water and bottled water (Mineral and Bottled Water Ordinance) - Microbiological test methods - Testing for faecal streptococci in natural mineral water, spring and bottled water, membrane filtration	AL
Min/TafelWV, Annex 2, Section 3 a Last amended 05.07.2017	Ordinance on natural mineral water, spring water and bottled water (Mineral and Bottled Water Ordinance) - Microbiological test methods - Testing for Pseudomonas aeruginosa in natural mineral water, spring and bottled water, liquid enrichment	AL
Min/TafelWV, Annex 2, Section 3 b Last amended 05.07.2017	Ordinance on natural mineral water, spring water and bottled water (Mineral and Bottled Water Ordinance) - Microbiological test methods - Testing for Pseudomonas aeruginosa in natural mineral water, spring and bottled water, membrane filtration	AL
Min/TafelWV, Annex 2, Section 5.2 Last amended 05.07.2017	Ordinance on natural mineral water, spring water and bottled water (Mineral and Bottled Water Ordinance) - Microbiological test methods - Determination of the colony count in natural mineral water, spring and bottled water, determination of the colony count, agar culture medium	AL
Min/TafelWV, Annex 2, Section 1.1 b Last amended 05.07.2017	Ordinance on natural mineral water, spring water and bottled water (Mineral and Bottled Water Ordinance) - Microbiological test methods - Detection of Escherichia coli in natural mineral water, spring and bottled water, membrane filtration	AL
Min/TafelWV, Annex 2, Section 1.2 b Last amended 05.07.2017	Ordinance on natural mineral water, spring water and bottled (Mineral and Bottled Water Ordinance) - Microbiological test methods - Detection of coliforms in natural mineral water, spring and bottled, membrane filtration	AL

Min/TafelWV, Annex 2, Section 4 a Last amended 05.07.2017	Ordinance on natural mineral water, spring water and bottled water (Mineral and Bottled Water Ordinance) - Microbiological test methods - Testing for sulphite-reducing, spore-forming anaerobes in natural mineral water, spring and bottled water, liquid enrichment	AL

16.2 Microbiological analysis of bacteria using cultural methods in organic fertilisers, soil improvers, topsoil and growing media and compost

Methodenbuch BGK - Section IV, C 1 2013-05	Disease hygiene: Product testing for Salmonella	AL

16.3 Microbiological analysis of moulds using cultural methods in Indoor air

Flexible scope: OP ***

DIN ISO 16000-17 2010-06	Indoor air - Part 17: Detection and enumeration of moulds - Culture-based method	AL, OP

16.4 Microbiological analysis of bacteria, yeasts and moulds using cultural methods in foodstuffs, feedstuffs, environmental samples and commodities

Flexible scope: OP *, WA *

DIN ISO 16649-2 2020-12	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of β-glucuronidase-positive Escherichia coli - Part 2: Colony-count technique at 44 °C using 5-bromo-4-chloro-3-indolyl β-D-glucuronide	AL, WA
DIN EN ISO 16649-3 2018-01	Microbiology of the food chain - Horizontal method for the enumeration of beta-glucuronidase-positive Escherichia coli - Part 3: Detection and most probable number technique using 5-bromo-4-chloro-3-indolyl-β-D-glucuronide (Restriction: *Only detection method*)	AL

DIN 10113-3 1997-07	Determination of surface colony count on fitment and utensils in food areas - Part 3: Semiquantitative method with culture media laminated taking up equipment (squeeze method)	AL (PN+Mess), BE (PN), BO (PN), BR (PN), HA (PN), MÜ (PN), OP (PN+Mess), RM (PN), WA (PN+Mess)
DIN 10106 2017-04	Microbiological analysis of meat and meat products - determination of Enterococcus faecalis and Enterococcus faecium - Spatula method (reference method)	AL
DIN 10109 2016-05	Microbiological analysis of meat and meat products - Determination of aerobic grown lactic acid bacteria - Spatula method	AL
DIN EN ISO 4833-1 2013-12	Microbiology of the food chain - Horizontal method for the enumeration of microorganisms - Part 1: Colony count at 30 degrees C by the pour plate technique	AL
DIN EN ISO 4833-2 2014-05	Microbiology of the food chain - Horizontal method for the enumeration of microorganisms - Part 2: Colony count at 30 degrees C by the surface plating technique	AL, WA
DIN EN ISO 6579-1 2020-08	Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of Salmonella - Part 1: Detection of Salmonella spp.	AL, WA
DIN EN ISO 6887-2 2017-07	Microbiology of the food chain - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Part 2: Specific rules for the preparation of meat and meat products	AL, WA
DIN EN ISO 6887-3 2017-07	Microbiology of the food chain - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Part 3: Specific rules for the preparation of fish and fish products	AL, WA

DIN EN ISO 6887-4 2017-07	Microbiology of the food chain - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Part 4: Specific rules for the preparation of miscellaneous products	AL, WA
DIN EN ISO 6887-5 2020-08	Microbiology of the food chain - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Part 5: Specific rules for the preparation of milk and milk products	AL, WA
DIN EN ISO 6887-6 2013-06	Microbiology of food and animal feeding stuffs - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Part 6: Specific rules for the preparation of samples taken at the primary production stage	AL, WA
DIN EN ISO 6888-1 2019-06	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) - Part 1: Technique using Baird-Parker agar medium	AL, WA
DIN EN ISO 6888-2 2003-12	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) - Part 2: Technique using rabbit plasma fibrinogen agar medium	AL, WA
DIN EN ISO 6888-3 2005-07	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) - Part 3: Detection and MPN technique for low numbers	AL, WA
DIN EN ISO 7932 2020-11	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of presumptive Bacillus cereus - Colony-count technique at 30 degrees C	AL, WA
DIN EN ISO 7937 2004-11	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of Clostridium perfringens - Colony-count technique	AL, WA
DIN EN ISO 10272-1 2017-09	Microbiology of the food chain - Horizontal method for the detection and enumeration of Campylobacter spp. - Part 1: Detection method	AL

DIN EN ISO 10272-2 2017-09	Microbiology of the food chain - Horizontal method for the detection and enumeration of Campylobacter spp. - Part 2: Colony-count technique	AL
DIN EN ISO 11290-1 2017-09	Microbiology of the food chain - Horizontal method for the detection and enumeration of Listeria monocytogenes and of Listeria spp. - Part 1: Detection method	AL, WA
DIN EN ISO 11290-2 2017-09	Microbiology of the food chain - Horizontal method for the detection and enumeration of Listeria monocytogenes and of Listeria spp. - Part 2: Counting methods	AL, WA
DIN EN ISO 13720 2010-12	Meat and meat products - Enumeration of presumptive Pseudomonas spp.	AL, WA
DIN EN ISO 21528-2 2019-05	Microbiology of the food chain - Horizontal method for the detection and enumeration of Enterobacteriaceae - Part 2: Colony-count technique	AL, WA
DIN EN ISO 22964 2017-08	Microbiology of the food chain - Horizontal method for the detection of Cronobacter spp.	AL
DIN ISO 21528-1 2017-09	Microbiology of the food chain - Horizontal method for the detection and enumeration of Enterobacteriaceae - Part 1: Detection of Enterobacteriaceae	AL, WA
ISO 4831 2006-08	Microbiology - Horizontal method for the detection and enumeration of coliforms - MPN technique	AL
ISO 4832 2006-02	Microbiology - Horizontal method for the enumeration of coliforms - Colony-count technique	AL, WA
ISO 15213 2003-05	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of sulphite-reducing bacteria growing under anaerobic conditions	AL
ISO 15214 1998-08	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of mesophilic lactic acid bacteria - Colony-count technique at 30 degrees C	AL, WA

ISO 21527-1 2008-07	Horizontal method for the enumeration of yeasts and moulds - Colony-count technique - Part 1: Colony count technique in products with water activity greater than 0,95	AL, OP, WA
ISO 21527-2 2008-07	Horizontal method for the enumeration of yeasts and moulds - Colony-count technique - Part 2: Colony count technique in products with water activity equal to or less than 0,95	AL, WA
bioMèrieux ALOA One Day Certificate-No.: AES 10/03-09/00 2019-12	ALOA One Day (Certificate-No.: AES 10/03-09/00) Validated for the detection of Listeria monocytogenes	AL, WA

16.5 Detection of bacteria by enzyme-bound fluorescence immunoassay in

bioMeriéux VIDAS® SLM 30702 2020-03	Detection of Salmonella in foodstuffs and animal food	AL

16.6 Microbiological analysis of bacteria, yeasts and moulds using cultural methods in cosmetics ***

DIN EN ISO 11930 2019-04	Cosmetics - Microbiology - Evaluation of the antimicrobial protection of a cosmetic product	WA
DIN EN ISO 16212 2017-09	Cosmetics - Microbiology -Enumeration of yeast and mould	WA
DIN EN ISO 18416 2018-01	Cosmetics - Microbiology - Detection of Candida albicans	WA
DIN EN ISO 21149 2017-11	Cosmetics - Microbiology -Enumeration and detection of aerobic mesophilic bacteria	WA
DIN EN ISO 21150 2016-05	Cosmetics - Microbiology - Detection of Escherichia coli	WA
DIN EN ISO 22717 2016-05	Cosmetics - Microbiology - Detection of Pseudomonas aeruginosa	WA

DIN EN ISO 22718 2016-05	Cosmetics - Microbiology - Detection of Staphylococcus aureus	WA

16.7 Determination of antibiotically active substances in meat by inhibitor test *

WES 113 2020-07	Screening test for the detection of antibiotic residues in meat	AL

17 Identification of bacteria, yeasts and other species by MALDI-TOF/MS in waste water, groundwater and surface water, raw water, drinking water (outside the scope of the German Drinking Water Ordinance), mineral, spring and bottled water (outside the scope of the German Mineral and Table Water Ordinance), swimming pool and bathing pool water, process water, industrial water (outside the scope of the 42nd BImSchV), foodstuffs, feedstuffs, microbiological isolates from environmental samples, cosmetics and raw materials for cosmetics

WES 1021 2019-12	Microbial identification of yeasts using MALDI-TOF/MS in foodstuffs, feedstuffs, water, microbiological isolates from material and environmental samples, cosmetics, raw materials and pharmaceutical products with the MALDI Biotyper® microflex LT system (Bruker): (Software version MBT Compass: Version 4.11, 05-2016; FlexControl: Version 3.4, 11-2011; Msp Library: SR BBFV, 01-2018; BCD D-MASS, 03-2018; BDAL, 11-2019; Filamentous Fungi, 07-2018)	AL
WES 1022 2019-12	Microbial identification of bacteria using MALDI-TOF/MS in foodstuffs, feedstuffs, water, microbiological isolates from material and environmental samples, cosmetics, raw materials and pharmaceutical products with the MALDI Biotyper® microflex LT system (Bruker): (Software version MBT Compass: Version 4.11, 05-2016; FlexControl: Version 3.4, 11-2011; Msp Library: SR BBFV, 01-2018; BCD D-MASS, 03-2018; BDAL, 11-2019; Filamentous Fungi, 07-2018)	AL

WES 1023 2018-04	Microbial identification of spore formers using MALDI-TOF/MS in foodstuffs, feedstuffs, water, microbiological isolates from material and environmental samples, cosmetics, raw materials and pharmaceutical products with the MALDI Biotyper® microflex LT system (Bruker): (Software version MBT Compass: Version 4.11, 05-2016; FlexControl: Version 3.4, 11-2011; Msp Library: SR BBFV, 01-2018; BCD D-MASS, 03-2018; BDAL, 11-2019; Filamentous Fungi, 07-2018)	AL
WES 1024 2018-04	Identification of buffalo and cow using MALDI-TOF/MS in foodstuffs, feedstuffs, water, microbiological isolates from material and environmental samples, cosmetics, raw materials and pharmaceutical products with the MALDI Biotyper® microflex LT system (Bruker): (Software version MBT Compass: Version 4.11, 05-2016; FlexControl: Version 3.4, 11-2011; Msp Library: SR BBFV, 01-2018; BCD D-MASS, 03-2018; BDAL, 11-2019; Filamentous Fungi, 07-2018)	AL
WES 1032 2018-04	Microbial identification of microorganisms using MALDI-TOF/MS in foodstuffs, feedstuffs, water, microbiological isolates from material and environmental samples, cosmetics, raw materials and pharmaceutical products with the MALDI Biotyper® microflex LT system (Bruker): (Software version MBT Compass: Version 4.11, 05-2016; FlexControl: Version 3.4, 11-2011; Msp Library: SR BBFV, 01-2018; BCD D-MASS, 03-2018; BDAL, 11-2019; Filamentous Fungi, 07-2018)	AL

18 Medicinal products and active ingredients

Biological analysis of medicinal products, active ingredients and excipients

Identification of bacteria and yeasts in pharmaceutical products using MALDI TOF /MS **

WES 1021 2019-12	Microbial identification of yeasts using MALDI-TOF/MS in foodstuffs, feedstuffs, water, microbiological isolates from material and environmental samples, cosmetics, raw materials and pharmaceutical products with the MALDI Biotyper® microflex LT system (Bruker): (Software version MBT Compass: Version 4.11, 05-2016; FlexControl: Version 3.4, 11-2011; Msp Library: SR BBFV, 01-2018; BCD D-MASS, 03-2018; BDAL, 11-2019; Filamentous Fungi, 07-2018)	AL
WES 1022 2019-12	Microbial identification of bacteria using MALDI-TOF/MS in foodstuffs, feedstuffs, water, microbiological isolates from material and environmental samples, cosmetics, raw materials and pharmaceutical products with the MALDI Biotyper® microflex LT system (Bruker): (Software version MBT Compass: Version 4.11, 05-2016; FlexControl: Version 3.4, 11-2011; Msp Library: SR BBFV, 01-2018; BCD D-MASS, 03-2018; BDAL, 11-2019; Filamentous Fungi, 07-2018)	AL
WES 1023 2018-04	Microbial identification of spore formers using MALDI-TOF/MS in foodstuffs, feedstuffs, water, microbiological isolates from material and environmental samples, cosmetics, raw materials and pharmaceutical products with the MALDI Biotyper® microflex LT system (Bruker): (Software version MBT Compass: Version 4.11, 05-2016; FlexControl: Version 3.4, 11-2011; Msp Library: SR BBFV, 01-2018; BCD D-MASS, 03-2018; BDAL, 11-2019; Filamentous Fungi, 07-2018)	AL

WES 1032 2018-04	Microbial identification of microorganisms using MALDI-TOF/MS in foodstuffs, feedstuffs, water, microbiological isolates from material and environmental samples, cosmetics, raw materials and pharmaceutical products with the MALDI Biotyper® microflex LT system (Bruker): (Software version MBT Compass: Version 4.11, 05-2016; FlexControl: Version 3.4, 11-2011; Msp Library: SR BBFV, 01-2018; BCD D-MASS, 03-2018; BDAL, 11-2019; Filamentous Fungi, 07-2018)	AL

19 Determination of heavy metal residues and elements in foodstuffs, feedstuffs, cosmetics and migrates of commodities ***

19.1 Sample preparation

DIN EN 13805 2014-12	Foodstuffs - Determination of trace elements - Pressure digestion (Modification*: Also feedstuffs*)	AL
ASU K 84.00-29 2016-07	Pressure digestion for the determination of elements in cosmetic products	AL

19.2 By atomic absorption spectroscopy (AAS)

ASU F 0089 2013-04	Determination of mercury in feedstuffs by cold-vapour atomic absorption spectrometry (CV-AAS) after microwave pressure digestion	AL
WES 1431 2021-06	Analysis of foodstuffs - Determination of trace elements in foodstuffs - Part 4: Determination of mercury by cold-vapour atomic absorption spectrometry (CVAAS) after pressure digestion	HA

19.3 By inductively coupled plasma atomic emission spectrometry (ICP-OES) *

ASU B 80.03-2 (EG) 2007-03	Analysis of commodity goods - Method of analysis for determination of possible migration of lead and/or cadmium - Annex I to Commission Directive 2005/31/EC of 29 April 2005 amending Council Directive 84/500/EEC as regards a declaration of compliance and performance criteria of the analytical method for ceramic articles intended to come into contact with foodstuffs (Restriction*: Only analysis of migrates of commodities*)	HA
WES 1434 2021-06	Analysis of foodstuffs - Determination of calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium, sulphur and zinc in foodstuffs with ICP-OES	HA

19.4 By inductively coupled plasma mass spectrometry (ICP-MS) *

Flexible scope: HA *

ASU B 80.03-2 (EG) 2007-03	Analysis of commodity goods - Method of analysis for determination of possible migration of lead and/or cadmium - Annex I to Commission Directive 2005/31/EC of 29 April 2005 amending Council Directive 84/500/EEC as regards a declaration of compliance and performance criteria of the analytical method for ceramic articles intended to come into contact with foodstuffs	HA
WES 1428 2021-06	Analysis of foodstuffs - Determination of metals in foodstuffs by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion (As, Ba, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, P, Pb, Pd, Pt, Sb, Se, Sn, Sr, U, Zn)	HA
WES 1427 2021-06	Analysis of foodstuffs - Determination of aluminium and boron in foodstuffs by inductively coupled plasma mass spectrometry (ICP-MS)	HA
WES 1430 2021-06	Analysis of cosmetic products - Determination of metals in cosmetic products and tattooing products by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion Al, As, Ba, Ca, Cd, Cr, Cu, Hg, Ni, Pb, Pt, Sb, Zn)	HA

ASU F 0108 2019-06	Analysis of feedstuffs - Determination of trace elements, heavy metals and other elements in feedstuffs by ICP-MS (multi-method) (Restriction: *Only As, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Mg, Mn, Mo, Na, Ni, P, Pb, Se, Zn*)	AL

20 Analysis of foodstuffs,-feedstuffs and environmental samples ***

20.1 Determination of ingredients in foodstuffs and feedstuffs by gravimetry *

ASU L 06.00-4 2017-10	Analysis of foodstuffs - Determination of ash in meat, meat products and sausages (Modification: *Ashing up to mass constancy, deviating ashing temperature, quartz crucibles not washed phosphate-free*)	AL
ASU L 06.00-6 2014-08	Analysis of foodstuffs - Determination of total fat content in meat and meat products - Weibull-Stoldt gravimetric method - Reference method (Modification: *Automation with Soxtherm*)	AL
ASU L 16.01-1 2008-12	Analysis of foodstuffs - Determination of moisture content in cereal flour	AL
ASU L 16.01-2 2008-12	Analysis of foodstuffs - Determination of ash in cereal flour (Modification: *Microwave ashing*)	AL
ASU L 17.00-1 1982-05 Corrigendum 2002-12	Determination of loss on drying in bread including small baked products made of bread dough (Modification: *Also pastries*)	AL
WES 1412 2021-03	Determination of fat in meat (Weibull-Stoldt modified)	AL

20.2 Determination of chemical-physical indicators in foodstuffs and feedstuffs using chemical-physical methods of analysis

20.2.1 Titrimetric analysis *

DIN EN ISO 660 2020-12	Animal and vegetable fats and oils - Determination of acid value and acidity	AL

ASU L 13.00-37 2018-06	Analysis of foodstuffs - Animal and vegetable fats and oils - Determination of the peroxide value	AL
ASU L 31.00-8 1997-01	Analysis of foodstuffs - Determination of the formol number of fruit and vegetable juices	AL

20.2.2 Determination by potentiometry

ASU L 06.00-2 1980-09	Measurement of pH in meat and meat products	AL

20.2.3 Refractometric analysis

ASU L 30.00-2 (EG) 1993-08	Analysis of foodstuffs - Refractometer method for determination of the soluble solids content of processed fruit and vegetable products	AL
VO (EU) Nr. 974/2014 2014-09	Commission implementing regulation (EU) No 974/2014 of 11 September 2014 laying down the refractometry method of measuring dry soluble residue in products processed from fruit and vegetables for the purposes of their classification in the Combined Nomenclature	AL

20.2.4 Detection of thermal conductivity after combustion (Dumas method) *

ASU L 01.00-60 2002-12	Analysis of foodstuffs - Determination of nitrogen content in milk and milk products - Dumas method	AL
ASU L 07.00-68 2021-03	Analysis of foodstuffs - Determination of crude protein content in meat products - Dumas method	AL
ASU L 17.00-18 2013-08	Analysis of foodstuffs - Determination of raw protein content in bread including small baked products made of bread dough - Dumas method	AL
VDLUFA Volume III, 4.1.2 2004	Determination of crude protein by the Dumas combustion method	AL

20.3 Determination of ingredients in foodstuffs by photometry *

ASU L 06.00-8 2017-10	Analysis of foodstuffs - Determination of hydroxyproline content in meat, meat products and sausages	AL
ASU L 06.00-9 2008-06 Corrigendum 2009-06	Analysis of foodstuffs - Determination of total phosphorus content in meat and meat products - Photometric method	AL

20.4 Determination of ingredients in foodstuffs by titrimetry

ASU L 03.00-11 2007-12	Analysis of foodstuffs - Determination of the chloride content of cheese and processed cheese - Potentiometric method (Modification: *Also in protein-rich, high-fat, starch-rich foodstuffs, non-alcoholic beverages, brine and condiments/spices*)	AL
ASU L 06.00-7 2014-08	Analysis of foodstuffs - Determination of crude protein content in meat and meat products - Kjeldahl titrimetric method - Reference method (Modification: *Also in high-protein, high-fat and starch-rich foodstuffs*)	AL
ASU L 26.04-4 1987-06	Analysis of foodstuffs - Determination of titratable acids (total acidity) in the cover brine and press liquor for sauerkraut (Modification: *Automatic titrator*)	AL

20.5 Determination of ingredients in foodstuffs by gas chromatography with conventional detectors (GC-FID)

WES 285 2019-11	Determination of the fatty acid spectrum in fats and oils by GC-FID	AL
WES 567 2019-11	Determination of butyric acid in chocolate and pastries by GC-FID	AL
WES 687 2019-11	Determination of cholesterol in foodstuffs (Schulte method)	AL

WES 1410 2021-04	Determination of MOSH and MOAH in low-fat foods by HPLC-GC-FID	AL
E. Schulte, Fat. Sci. Technol. 91 (1989) 181	Determination of trans fatty acids in fats, oils and foodstuffs	AL

20.6 Determination of ingredients in foodstuffs by gas chromatography with mass selective detectors (GC-MS, -MS/MS) **

ASU L 00.00-34 2010-09	Analysis of foodstuffs - Modular multi-method for the determination of pesticide residues in foodstuffs *(Restriction to food groups 4a, 4b, 5, 8 and 9*)	BE
ASU L 00.00-115 2018-10	Analysis of foodstuffs - New version of the multi-method for determination of pesticide residues in plant-based foodstuffs by GC-MS and/or LC-MS/MS after acetonitrile extraction/partitioning and clean-up using dispersive SPE (QuEChERS) (Modification*: Also in fatty plant-based foodstuffs and foodstuffs of animal origin*)	BE
ASU F 0057 2019-06	Analysis of foodstuffs - Multiple analytical method for the determination of pesticide residues using GC and LC after acetonitrile extraction/partitioning and clean-up by dispersive SPE in plant-based foodstuffs. Modular QuEChERS method	BE
WES 341 2020-12	Determination of polycyclic aromatic hydrocarbons (PAH) in foodstuffs by GC-MS	BE
WES 1190 2020-12	Determination of polycyclic aromatic hydrocarbons (PAH) in feedstuffs by GC-MS	BE

20.7 Determination of ingredients, preservatives and mycotoxins in foodstuffs by high-performance liquid chromatography (HPLC) with conventional detectors (HPLC-UV/VIS, DAD, RI, fluorescence) **

ASU L 00.00-28 2001-07	Analysis of foodstuffs - Determination of acesulfame-K, aspartame and saccharin in foodstuffs - HPLC-method	AL
ASU L 46.00-3 2013-08	Analysis of foodstuffs - Analysis of coffee and coffee products - Determination of caffeine content using HPLC - Reference method	AL

ASU L 00.00-9 1984-11	Analysis of foodstuffs - Determination of preservatives in high-fat foodstuffs (Modification: *Also meat, fish and mayonnaise; sample preparation adapted to matrix*)	AL
ASU L 17.00-14 1987-06 Corrigendum 2002-12	Analysis of foodstuffs - Determination of propionic acid in bread	AL
ASU L 18.00-16 1999-11	Analysis of foodstuffs - Determination of theobromine and caffeine in pastries (Modification: *Also cocoa products and chocolate*)	AL
WES 1447 2021-06	Determination of ochratoxin A (OTA) in cereals, malt and beer after enrichment and separation on immunoaffinity columns and subsequent high-performance liquid chromatography with fluorescence detection	AL
VDLUFA Volume III, Section 16.12.1 2006	Determination of deoxynivalenol - HPLC method	AL
WES 063 2019-05	Determination of sugars in foodstuffs by HPLC-RI	AL
WES 072 2021-02	Deoxynivalenol (DON) in foodstuffs (LC)	AL
WES 072 2021-02	Determination of zearalenone (ZEA) in cereals by HPLC	AL

20.8 Determination of ingredients, pesticide residues and mycotoxins in foodstuffs and feedstuffs by high-performance liquid chromatography with mass-selective detectors (HPLC-MS/MS) **

ASU L 00.00-115 2018-10	Analysis of foodstuffs - Multi-method for determination of plant protection product residues in plant-based foodstuffs by GC-MS (/MS) or LC-MS/MS after acetonitrile extraction/partitioning and clean-up using dispersive SPE (QuEChERS modular) (Modification: Also in fatty plant-based foodstuffs and feedstuffs, as well as foodstuffs of animal origin)	BE

ASU F 0057 2019-06	Analysis of foodstuffs - Multiple analytical method for the determination of pesticide residues using GC and LC after acetonitrile extraction/partitioning and clean-up by dispersive SPE in plant-based foodstuffs. Modular QuEChERS method	BE
WES 1138 2021-04	Determination of fumonisin B_1-and B_2 in cereals and cereal products by LC-MS/MS	BE
WES 1174 2021-01	Determination of phenoxycarboxylic acids in plant-based foodstuffs and feedstuffs by LC-MS/MS (alkaline hydrolysis)	BE

20.9 Determination of ingredients, residues and contaminants in foodstuffs

20.9.1 By ion chromatography with conventional detectors (IC-LF, -UV/VIS,-PAD) *

ASU L 26.00-1 2018-10	Analysis of foodstuffs - Determination of the nitrate content in vegetables and vegetable products - HPLC/IC method (Modification: *Determination only in dairy products*)	AL
ASU L 07.00-61 2007-04	Analysis of foodstuffs - Determination of nitrate and nitrite content in meat products	AL

20.9.2 By liquid chromatography with mass selective detectors (LC-MS/MS) **

ASU L 00.00-113 2015-03	Analysis of foodstuffs - Determination of pesticide residues in plant-based foodstuffs - LC-MS/MS method following methanol extraction and clean-up using diatomaceous earth	BE
WES 404 2021-01	Determination of melamine in milk powder by LC-MS/MS	BE
WES 658 2020-02	Determination of quaternary ammonium compounds BAC/DDAC in foodstuffs by LC-MS/MS	BE
WES 679 2021-01	Determination of glyphosate, AMPA and glufosinate in foodstuffs and beer by LC-MS/MS	BE
WES 897 2021-03	Determination of highly polar plant protection products in foodstuffs by LC-MS/MS (QuPPe)	BE

WES 1141 2021-01	Determination of patulin in fruit juices and purees by LC-MS/MS	BE
WES 1178 2021-01	Determination of chlormequat and mepiquat in plant-based foodstuffs by LC-MS/MS	BE

20.9.3 By gas chromatography with mass selective detectors (GC-MS, GC-MS/MS) **

DGF C-VI 18 (10) 2015	Fatty acid-bound 3-chloropropane-1,2-diol (3-MCPD ester) and 2,3-epoxipropane-1-ol (glycidol) - Determination in fats and oils by GC-MS (Modification: *Also 2-MCPD, automation of sample preparation for fats and oils, addition of ethylene glycol, detection by GC-MS/MS*)	AL
WES 005 2021-01	Determination of acrylamide in bakery products and starchy foodstuffs by GC	BE
WES 047 2021-01	Determination of acrylamide in coffee by GC-MS	BE
WES 049 2021-01	Determination of acrylamide in cane sugar and sugar molasses by GC-MS	BE
WES 1136 2021-03	Determination of dithiocarbamate and thiuram disulphide residues in low-fat foodstuffs by headspace GC-MS	BE
WES 1171 2021-01	Determination of furan in coffee and other foodstuffs by GC-MS	BE
WES 1354 2021-02	Determination of total inorganic bromide in plant-based foodstuffs by GC-MS	BE

20.10 Determination of ingredients in foodstuffs by enzymatic methods (photometric, enzyme test kit) *

ASU L 01.00-17 2016-10	Analysis of foodstuffs - Determination of lactose and galactose content of milk and milk products - Enzymatic method (Test kit: Appl. r-Biopharm 10 176 303 035)	AL

ASU L 05.00-2 1987-11 Corrigendum 2002-12	Analysis of foodstuffs; determination of L-lactic acid, succinic acid and D-3-hydroxybutyric acid in egg and egg products - Enzymatic method (Test kit: Appl. r-Biopharm 11 112 821 035, 10 176 281 035, 10 907 979 035)	AL
ASU L 07.00-25 1983-05	Determination of starch in meat products (Test kit: Appl. r-Biopharm 10 207 748 035)	AL
Appl. r-Biopharm No. 10 409 677 035 2015-10	Determination of ascorbic acid in foodstuffs and other sample materials	AL
Appl. r-Biopharm No. 11 112 821 035 2014-04	Determination of D-lactic acid and L-lactic acid in protein-rich foods	AL
Appl. r-Biopharm No. 10 716 260 035 2014-04	Determination of the sugars sucrose, D-glucose and D-fructose in foodstuffs and other sample materials	AL

20.11 Determination of appearance, smell and taste of foodstuffs and feedstuffs by sensory testing

DIN 10964 2014-11	Sensory analysis - Simple descriptive test	AL, WA

20.12 Determination of ingredients and contaminants in foodstuffs and feedstuffs by microscopy

Regulation (EC) 51/2013 Annex VI 2013	Methods of analysis for the determination of constituents of animal origin for the official control of feed	AL

20.13 Determination of ingredients in foodstuffs and environmental samples by immunoassay (ELISA) *

R 7001 Ridascreen®Gliadin 2016-10	Enzyme immunoassay for quantitative determination of gliadin (gluten) (Modification: *Qualitative in environmental samples and set of four*)	AL

R 7021 Ridascreen®Gliadin competitive 2018-02	Enzyme immunoassay for the quantitative determination of gliadin (gluten) in fermented or hydrated foodstuffs (Modification: *Qualitative in environmental samples*)	AL
R6402 RIDASCREEN®FAST Ei/Egg Protein 2017-09	Enzyme immunoassay for quantitative determination of egg (Modification: *Qualitative in environmental samples*)	AL
R4652 RIDASCREEN®FAST Milch/Milk 2018-08	Enzyme immunoassay for quantitative determination of milk (Modification: *Qualitative in environmental samples*)	AL
R 6802 Ridascreen® Fast Haselnuss/Hazelnut 2017-06	Enzyme immunoassay for quantitative determination of hazelnut (Modification: *Qualitative in environmental samples*)	AL
R 6901 Ridascreen® Fast Mandel/Almond 2017-08	Enzyme immunoassay for quantitative determination of almond (Modification: *Qualitative in environmental samples*)	AL
R 6202 Ridascreen® Fast Erdnuss/Peanut 2017-09	Enzyme immunoassay for quantitative determination of peanut (Modification: *Qualitative in environmental samples*)	AL
R 6102 Ridascreen® Fast Lupine/Lupin 2016-02	Enzyme immunoassay for quantitative determination of lupin (Modification: *Qualitative in environmental samples*)	AL
8460 Veratox® for Casein 2011-08	Enzyme immunoassay for quantitative determination of casein (Modification: *Qualitative in environmental samples*)	AL
9505 Veratox for Histamine 2015-10	Enzyme immunoassay for the quantitative determination of histamine in fish, cheese, wine, meat (Modification: *Qualitative in environmental samples*)	AL
Crustacean ESCRURD-48 2011-03	Enzyme immunoassay for quantitative determination of crustacean tropomyosin (Modification: *Qualitative in environmental samples*)	AL
Soy ESSOYPRD-48 2011-04	Enzyme immunoassay for quantitative determination of soy (Modification: *Qualitative in environmental samples*)	AL

Mustard ESMUS-48 2010-11	Enzyme immunoassay for quantitative determination of mustard (Modification: *Qualitative in environmental samples*)	AL
Sesame ESSESE-48 2017-07	Enzyme immunoassay for quantitative determination of sesame (Modification: *Qualitative in environmental samples*)	AL
Beta Lactoglobulin ESMRDBLG-48 2009-08	Enzyme immunoassay for quantitative determination of beta-lactoglobulin (Modification: *Qualitative in environmental samples*)	AL
WES 1207 2019-12	Soya mass determination within the framework of VLOG analysis	AL

20.14 Molecular biological analysis for the detection of specific DNA sequences in foodstuffs, feedstuffs and environmental samples

20.14.1 By real-time PCR

Flexible scope: AL **, WA *

DIN EN ISO 21569 2013-08	Foodstuffs - Methods of analysis for the detection of genetically modified organisms and derived products - Qualitative nucleic acid based methods (Modification: *Application for feedstuffs and environmental samples*)	AL
GEN-IAL® genControl RT triplex V bar/pat/EPSPS Kit 2015-05	Screening for genetically modified organisms (GMO) by real-time PCR	AL
R 602 27 foodproof® Salmonella Detection LyoKit 2019-11	Qualitative detection of Salmonella spp. by real-time PCR.	AL, WA
R 602 23 foodproof® Listeria monocytogenes Detection LyoKit 2019-12	Qualitative detection of Listeria monocytogenes by real-time PCR	AL, WA

R 602 20 foodproof® Listeria Genus Detection LyoKit 2017-05	Qualitative detection of Listeria spp. by real-time PCR	AL
R 602 11 foodproof® STEC Screening LyoKit 2020-10	Qualitative detection of the Shiga toxins stx1 and stx2, as well as the adherence factor intimin (eae) by real-time PCR	AL, WA
F5105 SureFast® STEC Screening PLUS 2019-07	Qualitative detection of the Shiga toxins stx1 and stx2 by real-time PCR	AL
R 302 10 foodproof® E. coli O157 Detection Kit 2017-03	Qualitative detection of E. coli O157 by real-time PCR	AL
R 302 05 foodproof® Campylobacter Quantification Kit 2017-03	Qualitative detection of thermotolerant Campylobacter by real-time PCR	AL
R 602 45 microproof® Legionella Quantification LyoKit 2020-01	Qualitative and quantitative detection of Legionella spp., Legionella pneumophila and Legionella pneumophila serogroup 1 by real-time PCR	AL
R 302 60 foodproof® Celery Detection Kit 2017-03	Qualitative and quantitative detection of celery by real-time PCR	AL
PHB 0050 GEN-IAL® First-Beef 2019-02	Qualitative detection of bovine DNA by real-time PCR	AL
PHP 0050 GEN-IAL® First-Pig PCR Kit 2016-10	Qualitative detection of porcine DNA by real-time PCR	AL
PHC 0050 GEN-IAL® First-Chicken PCR Kit 2016-10	Qualitative detection of chicken DNA by real-time PCR	AL
PHT 0050 GEN-IAL® First-Turkey PCR Kit 2016-10	Qualitative detection of turkey DNA by real-time PCR	AL

PHSP 0050 GEN-IAL® First-Sheep PCR Kit 2016-10	Qualitative detection of ovine DNA by real-time PCR	AL
PHH 0050 GEN-IAL® First-Horse PCR Kit 2016-10	Qualitative detection of equine DNA by real-time PCR	AL
PHH 0050 GEN-IAL® First-Goat PCR Kit 2016-10	Qualitative detection of caprine DNA by real-time PCR	AL
PHM 0050 GEN-IAL® First-Meat PCR Kit 2016-10	Qualitative detection of vertebrate DNA (mammalian / poultry) by real-time PCR	AL
ANIT 1 0050 GEN-IAL® First-Animal Tetra I 2019-06	Qualitative detection of pork, beef, chicken and turkey by real-time PCR	AL

20.14.2 By PCR

WES 442 2015-06	Determination of sex in meat by PCR	AL

21 Analysis of commodity goods in contact with foodstuffs and the body, toys and joke articles ***

21.1 Sample preparation for physico-chemical and chemical analysis *

DIN EN 71-3 2019-08	Safety of toys - Part 3: Migration of certain elements (Restriction*: Sample preparation only*)	AL
DIN EN 645 1994-01	Paper and board intended to come into contact with foodstuffs - Preparation of a cold water extract	AL
DIN EN 647 1994-01	Paper and board intended to come into contact with foodstuffs - Preparation of a hot water extract	AL

ASU B 80.03-2 (EC) 2007-03	Analysis of commodity goods - Method of analysis for determination of possible migration of lead and/or cadmium - Annex I to Commission Directive 2005/31/EC of 29 April 2005 amending Council Directive 84/500/EEC as regards a declaration of compliance and performance criteria of the analytical method for ceramic articles intended to come into contact with foodstuffs (Restriction*: Sample preparation only*)	AL

21.2 Migration testing of commodities by gravimetry *

DIN EN 1186-1 2002-07	Materials and articles in contact with foodstuffs - Plastics - Part 1: Guideline on the selection of test conditions and methods for overall migration	AL
DIN EN 1186-3 2002-07	Materials and articles in contact with foodstuffs - Plastics - Part 3: Test methods for overall migration in aqueous test foodstuffs by total immersion	AL
DIN EN 1186-5 2002-07	Materials and articles in contact with foodstuffs - Plastics - Part 5: Test methods for overall migration in aqueous test foodstuffs by cell	AL
DIN EN 1186-9 2002-07	Materials and articles in contact with foodstuffs - Plastics - Part 9: Test methods for overall migration in aqueous test foodstuffs by filling the item	AL
DIN EN 1186-13 2002-12	Materials and articles in contact with foodstuffs - Plastics - Part 13: Test methods for overall migration at high temperatures	AL
DIN EN 1186-14 2002-12	Materials and articles in contact with foodstuffs - Plastics - Part 14: Test methods for “substitute tests” for overall migration from plastics intended to come into contact with fatty foodstuffs using test media iso-octane and 95% ethanol	AL

21.3 Determination of volatile components in commodities by gravimetry

61. Communication Bundesgesundheitsblatt (Federal Health Gazette) Health Research Health Protection 46 (2003) 365 2003	BfR Recommendation B II XV - Analysis of commodity goods made of silicone elastomers - B. Determination of volatile fractions	AL

21.4 Determination of ingredients and contaminants in commodities by potentiometry *

DIN CEN/TS 13130-23 Prestandard 2005-05	Materials and articles in contact with foodstuffs - Plastics substances subject to limitation - Part 23: Determination of formaldehyde and hexamethylenetetramine in food simulants	AL
ASU L 00.00-6 1995-01 Corrigendum 2002-12	Analysis of foodstuffs - Determination of primary aromatic amines in aqueous test foodstuffs	AL

21.5 Determination of ingredients, residues and contaminants in commodities

21.5.1 By gas chromatography with standard detectors (GC-FID)

WES 1411 2021-04	Measurement of mineral oil hydrocarbons (MOSH and MOAH) in packaging materials	AL

21.5.2 By gas chromatography with mass selective detectors (GC-MS) **

AfPS GS 2019-01	Testing and assessment of polycyclic aromatic hydrocarbons (PAHs) in the award of the GS mark	BE
WES 517 2020-12	Determination of polyaromatic hydrocarbons (PAHs) in plastics by GC-MS	BE
WES 541 2020-12	Determination of phthalates in plastics by GC-MS	BE

21.6 Analysis of odour, taste and colour transfer in commodities by sensory analysis *

DIN EN 646 2019-02	Paper and board intended to come into contact with foodstuffs - Determination of colour fastness of dyed paper and board	AL
DIN EN 648 2019-02	Paper and board intended to come into contact with foodstuffs - Determination of the fastness of fluorescent whitened paper and board	AL
DIN EN 1230-1 2010-02	Paper and board intended to come into contact with foodstuffs - Sensory analysis - Part 1: Odour	AL
DIN EN 1230-2 2018-10	Paper and board intended to come into contact with foodstuffs - Sensory analysis - Part 2: Off-flavour (taint)	AL
DIN 10955 2004-06	Sensory analysis - Testing of packaging materials and packages for foodstuffs	AL
BfR Recommendation IX 1972	Testing of dyed commodities made of plastics and other polymers for colour fastness, 24th Communication on analysis of plastics: Bundesgesundheitsblatt (Federal Health Gazette) 15, 285 (1972)	AL

22 Determination of ingredients and contaminants in cosmetics by gas chromatography with mass selective detectors (GC-MS) **

WES 677 2020-12	Determination of phthalates in cosmetics	BE
WES 697 2020-12	Determination of polycyclic aromatic hydrocarbons (PAHs) in cosmetics	BE

The methods listed in section 12.4 comply with the requirements of the
"Specialist customer certificate for determination in the area of immission control"
"LAI specialist module for immission control" (updated version by L/W/V of 30.01.2018)

Competence is confirmed for the testing and technical areas of activity regulated by immission control law

Group I No. 1: G, P, Sp, Sa; Group I No. 2: G; Group II No. 1: G, P; Group II No. 2: G.

The methods listed in section 12.5 comply with the requirements for determining the concentration of hazardous substances at workplaces. Together with the review of the reports submitted in sufficient numbers for the individual groups, competence for the locations

Berlin (BE)
Group 1
Group 3
Group 4
Group 5 (isocyanates, DME, KSS)

Bochum (BO)
Group 1
Group 2
Group 3
Group 4
Group 5 (isocyanates, DME, MWF)

for the determination and assessment of concentrations of hazardous substances in air in work areas in accordance with the German Ordinance on Hazardous Substances Section 7 (10) is confirmed.

Abbreviations used:

AbfKlärV	German Sewage Sludge Ordinance
Was	Waste water (including landfill seepage water)
AltholzV	German Waste Wood Ordinance
AQS Data Sheet	AQS Data Sheets of the Länderarbeitsgemeinschaft Wasser (Regional Working Group on Water) for analysis of water, waste water and sludge
ASU	Amtliche Sammlung von Untersuchungsverfahren (Official Collection of Methods of Analysis) on the basis of Section 64 LFGB (German Food and Feed Act)
BioAbfV	German Biowaste Ordinance
BGI	Methods of analysis recognised by the employers' liability insurance associations for determining concentrations of carcinogenic substances in the air in work areas
BGIA	Berufsgenossenschaftliches Institut für Arbeitsschutz (German Institute for Occupational Safety and Health)
DFG	Deutsche Forschungsgemeinschaft (German Research Foundation)
DIN	Deutsches Institut für Normung (German Institute for Standardization)
DVWK	Deutscher Verband für Wasserwirtschaft und Kulturbau e. V. (German Association for Water Management and Land Improvement)
EN	European standard
EPA	Environmental Protection Agency, USA
GAFTA	The Grain and Feed Trade Association
Raw	Groundwater and raw water (methods in accordance with AbwV in bold)
ITVA	Ingenieurtechnischer Verband Altlasten e. V. (Engineering Association for Contaminated Sites)
ISO	International Organization for Standardization
LABO	Bund/Länder-Arbeitsgemeinschaft Bodenschutz (Federal/Regional Working Group on Soil Protection)
LAGA	Bund/Länder-Arbeitsgemeinschaft Abfall (Federal/Regional Working Group on Waste)
LAWA	Bund/Länder-Arbeitsgemeinschaft Wasser (Federal/Regional Working Group on Water)
LFGB	Lebensmittel-, Bedarfsgegenstände- und Futtermittel-Gesetzbuch (German Food and Feed Act)
LUA	Landesumweltamt Nordrhein-Westfalen (State Environment Office North Rhine-Westphalia)
Methodenbuch BGK e. V.	Method book of Bundesgütegemeinschaft Kompost (German Federal Compost Association) for the analysis of organic fertilisers, soil improvers and substrates
NIOSH	National Institute for Occupational Safety and Health
NLfB/BGR	Niedersächsisches Landesamt für Bodenforschung / Bundesanstalt für die Geowissenschaften und Rohstoffe (Lower Saxony State Office for Soil Research / Federal Institute for Geosciences and Natural Resources)
Sur	Surface water

Ph. Eur.	European Pharmacopoeia
TrinkwV	German Drinking Water Ordinance
TRGS	Technische Regeln für Gefahrstoffe (technical rules for hazardous substances)
VDI	Verein deutscher Ingenieure e. V: (Association of German Engineers)
VDLUFA	Verband Deutscher Landwirtschaftlicher Untersuchungs- und Forschungsanstalten (Association of German Agricultural Testing and Research Institutions)
WES	In-house method of Wessling GmbH
ZH	Zentralstelle für Unfallverhütung und Arbeitsmedizin (Central Office for Accident Prevention and Occupational Medicine)