Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-14115-02-14 according to DIN EN ISO/IEC 17025:2018

Valid from: **01.04.2021**

Date of issue: 24.09.2021

Holder of certificate:

SGS INSTITUT FRESENIUS GmbH
Güttinger Straße 37, 78315 Radolfzell

Tests in the fields:

Selected physical, physico-chemical, chemical analysis of water (surface water, groundwater, mineral water, spa water, bathing pool water, drinking water, water from recooling systems and ventilation and air-conditioning systems) and waste water;
Microbiological analysis of water (groundwater, mineral water, spa water, cooling water, water for the production of foodstuffs and cosmetics) waste water and of biowaste;
Microbiological and selective chemical examination in accordance with German Drinking Water Ordinance;
Selected microbiological analysis of foodstuffs and air;
Sampling of waste water, raw water and drinking water, spa and mineral water, swimming pool and bathing pool water, water from barrages and lakes, aquifers, running waters, water from recooling systems and ventilation and air-conditioning systems, of waste, sludge, sediments, wood waste, waste oil, waste for deposition and agricultural soils;
Sampling and microbiological analysis of industrial water in accordance with Section 3 (8) 42nd BImSchV;
Specialist modules for water and waste

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.

The testing laboratory is permitted to apply the listed standardised or equivalent test methods with different versions of the standards without obtaining prior notification and consent from DAkkS, with the exception of the specialist modules (sections 8 and 9) and sections 1.7, 3.2, 5 and 6.

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

Table of contents

1 Analysis of water (surface water, groundwater, water from mineral springs and spas, waste water, swimming pool and bathing pool water, drinking water, water from recooling systems and ventilation and air-conditioning systems, water for the production of foodstuffs and cosmetics) and waste water

1.1 Sampling

ISO 5667-11 2009-04	Water quality - Sampling - Part 11: Guidance on sampling of groundwaters
DIN EN ISO 5667-1 (A 4) 2007-04	Water quality - Sampling - Part 1: Guidance on the design of sampling programmes and sampling techniques
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
DIN 38402-A 18 1991-05	Sampling of water from mineral springs and spas

DIN EN ISO 5667-3 (A 21) 2019-07	Water quality - Sampling - Part 3: Preservation and handling of water samples
DIN 38402-A 11 2009-02	Sampling of waste water
DIN 38402-A 30 1998-07	Pretreatment, homogenisation and aliquotation of non-homogeneous water samples
DIN EN ISO 19458 (K 19) 2006-12	Water quality - Sampling for microbiological analysis
DIN EN ISO 19458 (K 19) Pkt. 4.4.3 und 4.4.4.1 2006-12	Water quality - Sampling for microbiological analysis (*Here for sampling of swimming pool and bathing pool water*)
DIN 19643-1 Pkt. 14.2 2012-11	Treatment of swimming pool and bathing pool water Part 1: General requirements *(Here for sampling*)
UBA recommendation of 04/12/2012	Hygiene requirements for baths and their monitoring
DVWK 245 1997-01	Depth-oriented sampling from groundwater monitoring wells
VDI 2047 Blatt 2 2017-11	Open recooler systems - Securing hygienically sound operation of evaporative cooling systems (VDI Cooling Tower Code of Practice) (Here: *Implementation of sampling*)

1.2 *Flavour & Aroma*

DEV B 1/2 1971	Test for odour and flavour

1.3 *Physical and physico-chemical parameters*

DIN EN ISO 7887 (C 1) 2012-04	Water quality - Examination and determination of colour
DIN EN ISO 7027 (C 2) 2019-06	Water quality - Determination of turbidity

DIN 38404-C 4 1976-12	Determination of temperature
DIN EN ISO 10523 (C 5) 2012-04	Water quality - Determination of pH
DIN 38404-C 6 1984-05	Determination of the oxidation reduction (redox) potential
DIN EN 27888 (C 8) 1993-11	Water quality - Determination of electrical conductivity
DIN 38404-C 10 2012-12	Calcit saturation of water

1.4 Anions

DIN 38405-D 9 2011-09	Photometric determination of nitrate
DIN EN 26777 (D 10) 1993-04	Water quality - Determination of nitrite - Spectrometric method

1.5 Cations

DIN 38406-E 5 1983-10	Determination of ammonia-nitrogen

1.6 Individual components and 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-diethyl-1,4-phenylenediamine, for routine control purposes
DIN 38408-G 5 1990-06	Determination of chlorine dioxide
DIN EN ISO 5814 (G 22) 2013-02	Water quality - Determination of dissolved oxygen - Electrochemical probe method

In-house method SOP M 1662 2014-10	Photometric determination of free chlorine, total chlorine and chlorine dioxide as well as ozone and bromine *(In accordance with the principle: DIN EN ISO 7393-2 (G 4-2) and DIN 38408-G 5*)

1.7 Microbiological analyses

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
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
DIN EN ISO 16266 (K 11) 2008-05	Detection and enumeration of Pseudomonas aeruginosa - Membrane filtration method
DIN EN ISO 9308-3 (K 13) 1999-07	Water quality - Detection and enumeration of Escherichia coli and coliform bacteria in surface water and waste water - Part 3: Miniaturised method by inoculation in liquid medium (MPN technique)
DIN EN ISO 7899-1 (K 14) 1999-07	Water quality - Detection and enumeration of intestinal enterococci in surface water and waste water - Part 1: Miniaturised method by inoculation in liquid medium (MPN technique)
DIN EN ISO 7899-2 (K 15) 2000-11	Water quality - Detection and enumeration of intestinal enterococci - Part 2: Membrane filtration method
Enterolert®-DW/ Quanti-Tray®	Quantitative detection of Enterococci with Enterolert-DW/Quanti-Tray
ISO 16266-2 2018-07	Water quality - Detection and enumeration of Pseudomonas aeruginosa - Part 2: Most probable number method
Drinking Water Ordinance 21.05.2001	Detection of Clostridium perfringens by membrane filtration (mCP method) at 44+- 1 °C over 21 +- 3 hours)

TrinkwV Section 15 (1c)	Determination of colony count at 22 °C and 36 °C

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

Sampling

Method	Title
DIN EN ISO 19458 (K 19) 2006-12	Water quality - Sampling for microbiological analysis
	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
Legionella	DIN EN ISO 11731 (K 23) 2019-03
	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
Colony count at 22°C and 36 °C	DIN EN ISO 6222 (K 5) 1999-07

3 Analysis of sludge and waste

3.1 Sampling

DIN EN ISO 5667-13 (S 1) 2011-08	Water quality - Sampling - Part 13: Guidance on sampling of sludge from waste water treatment and water purification plants
DIN 38414-S 11 1987-08	Sampling of sediments
DIN EN 932-1 1996-11	Test for general properties of aggregates - Part 1: Methods of sampling
AbfKlärV, Annex 1 1992-06	Sampling of sewage sludge and agricultural soils

LAGA Mineral Residues 1997-11	Requirements for the recycling of mineral residues/wastes - Technical rules
LAGA PN 98 2002	Guidelines on procedures for chemical, physical and biological examination in connection with the recovery and disposal of waste

3.2 Microbiological analysis of biowaste

DIN 38414-S 13 1992-03	Detection of salmonellae in disinfected sewage sludge (Deviation: *Analogue also in soil and compost*)
BioAbfV, Annex 2 1998-09	Testing for salmonella

4 Tests in accordance with the German Drinking Water Ordinance - TrinkwV

Sampling

Method	Title
DIN EN ISO 5667-1 (A 4) 2007-04	Water quality - Sampling - Part 1: Guidance on the design of sampling programmes and sampling techniques
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
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
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

ANNEX 1: MICROBIOLOGICAL PARAMETERS

PART I: General requirements for drinking water

No.	Parameter	Method
1	Escherichia coli (E. coli)	DIN EN ISO 9308-1 (K 12) 2017-09
		DIN EN ISO 9308-2 (K 6-1) 2014-06
2	Enterococci	DIN EN ISO 7899-2 (K 15) 2000-11
		Enterolert®-DW

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

No.	Parameter	Method
1	Escherichia coli (E. coli)	DIN EN ISO 9308-1 (K 12) 2017-09
2	Enterococci	DIN EN ISO 7899-2 (K 15) 2000-11
		Enterolert®-DW
3	Pseudomonas aeruginosa	DIN EN ISO 16266 (K 11) 2008-05
		Pseudalert® /Quanti-Tray

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
1	Acrylamide	Not used
2	Benzene	Not used
3	Boron	Not used
4	Bromate	Not used
5	Chromium	Not used
6	Cyanide	Not used
7	1,2-dichloroethane	Not used
8	Fluoride	Not used
9	Nitrate	DIN 38405-D 9 2011-09
10	Plant protection product active ingredients and biocidal product active ingredients	Not used
11	Plant protection product active ingredients and biocidal product active ingredients total	Not used
12	Mercury	Not used
13	Selenium	Not used
14	Tetrachloroethene and trichloroethylene	Not used
15	Uranium	Not used

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

No.	Parameter	Method
1	Antimony	Not used
2	Arsenic	Not used
3	Benzo[a]pyrene	Not used
4	Lead	Not used
5	Cadmium	Not used
6	Epichlorohydrin	Not used
7	Copper	Not used
8	Nickel	Not used
9	Nitrite	DIN EN 26777 (D 10) 1993-04
10	Polycyclic aromatic hydrocarbons (PAH)	Not used
11	Trihalomethanes (THM)	Not used
12	Vinyl chloride	Not used

ANNEX 3: INDICATOR PARAMETERS

Part I: General indicator parameters

No.	Parameter	Method
1	Aluminium	Not used
2	Ammonium	DIN 38406-E 5 1983-10
3	Chloride	Not used
4	Clostridium perfringens (including spores)	DIN EN ISO 14189 (K 24) 2016-11
5	Coliform bacteria	DIN EN ISO 9308-1 (K 12) 2017-09 DIN EN ISO 9308-2 (K 6-1) 2014-06
6	Iron	Not used
7	Colouring (spectral absorption coefficient Hg 436 nm)	DIN EN ISO 7887 (C 1) 2012-04
8	Odour (as TON)	DIN EN 1622 (B 3) 2006-10 (Anhang C)
9	Taste	Not used
10	Colony count at 22 °C	DIN EN ISO 6222 (K 5) 1999-07 TrinkwV Section 15 (1c)
11	Colony count at 36 °C	DIN EN ISO 6222 (K 5) 1999-07 TrinkwV Section 15 (1c)
12	Electrical conductivity	DIN EN 27888 (C 8) 1993-11
13	Manganese	Not used
14	Sodium	Not used
15	Organically bound carbon (TOC)	Not used
16	Oxidisability	Not used
17	Sulphate	Not used

No.	Parameter	Method
18	Turbidity	DIN EN ISO 7027-1 (C 21) 2016-11
19	Hydrogen ion concentration	DIN EN ISO 10523 (C 5) 2012-04
20	Calcite dissolving capacity	Not used

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

Parameter	Method
Legionella spec.	ISO 11731 2017-05 UBA recommendation 18 December 2018

APPENDIX 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

Not used

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

5 Further analysis of mineral water and bottled water

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 (Modification: *Determination using API*)
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 (Modification: *Determination using API*)
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

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 (Modification: *Determination using API*)
Min/TafelWV, Annex 2, Section 4 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 sulphite-reducing, spore-forming anaerobes in natural mineral water, spring and bottled water, liquid enrichment
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

6 Germination in air/environments

DIN ISO 16000-18 2012-01	Indoor air - Part 18: Detection and enumeration of moulds - Sampling by impaction
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)
VDI 6022 Blatt 1 2011-07	Hygiene requirements for ventilation and air-conditioning systems and equipment - Measurement methods and examinations during hygiene controls and hygiene inspections

7 Analysis of foodstuffs

7.1 Detection of bacterial count

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

7.2 Detection of Listeria monocytogenes

DIN EN ISO 11290-1 2017-09	Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of Listeria monocytogenes - Part 1: Detection method
DIN EN ISO 11290-2 2017-09	Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of Listeria monocytogenes - Part 2: Counting methods

7.3 Detection of salmonella

DIN EN ISO 6579 2017-07	Microbiology of food and animal feeding stuffs - Horizontal method for the detection of Salmonella spp. (Restriction: *Without Annex D*)

7.4 Detection of coagulase-positive staphylococci

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) in foodstuffs - Part 1: Technique using Baird-Parker agar medium
SOP M568-07 2017-11	Microbiological analysis of foodstuffs and food supplements in the microbiological laboratory

8 Test method list for specialist module for water

Revised: LAWA of 18.10.2018

Section 1: Sampling and general parameters

Parameter	Method	Was	Sur	Raw
Sampling of waste water	**DIN 38402-A 11: 2009-02**	☒		
Sampling from running waters	DIN EN ISO 5667-6: 2016-12 (A 15		☒	
Sampling from aquifers	DIN 38402-A 13: 1985-12			☒
Sampling from barrages and lakes	DIN 38402-A 12: 1985-06		☒	
Homogenisation of samples	**DIN 38402-A 30: 1998-07**	☒	☒	
Temperature	DIN 38404-C 4: 1976-12	☒	☒	☒
pH value	**DIN EN ISO 10523: 2012-04 (C 5)**	☒	☒	☒

Parameter	Method	Was	Sur	Raw
Conductivity (25 °C)	DIN EN 27888: 1993-11 (C 8)	☒	☒	☒
Odour	DIN EN 1622: 2006-10 (B 3) Annex C	☒	☒	☒
Colouring	DIN EN ISO 7887: 2012-04 (C 1), Method A	☒	☒	☒
Turbidity	DIN EN ISO 7027: 2000-04 (C 2)	☒	☒	☒
Oxygen	DIN EN ISO 5814: 2013-03 (G 22)		☒	☒
	DIN ISO 17289: 2014-12 (G 25)		☒	☒
	DIN EN 25813: 1993-01 (G 21)		☐	☐
Redox potential	**DIN 38404-C 6: 1984-05**	☒		☒

Section 2: Photometry, ion chromatography, titrimetry

Parameter	Method	Was	Sur	Raw
Absorption at 254 nm (SAC 254)	DIN 38404-C 3: 2005-07		☒	☒
Absorption at 436 nm (SAC 436)	DIN EN ISO 7887: 2012-04 (C 1), Method B	☐	☒	☒
Ammonium nitrogen	**DIN EN ISO 11732: 2005-05 (E 23)**	☐	☐	☐
	DIN 38406-E 5: 1983-10	☐	☒	☒
	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)**	☐	☒	☒
	DIN EN ISO 10304-1: 2009-07 (D 20)	☐	☐	☐
	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)**	☐	☐	☐
	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)	☐	☐	☐

Parameter	Method	Was	Sur	Raw
Phosphorus, total *(see also section 3)*	**DIN EN ISO 6878: 2004-09 (D 11)**	☐	☐	☐
	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)		☐	☐
	DIN EN ISO 6878: 2004-09 (D 11)		☐	☐
	DIN EN ISO 15681-1: 2004-07 (D 45)		☐	☐
	DIN EN ISO 15681-2: 2005-05 (D 46)		☐	☐
	DIN ISO 15923-1: 2014-07 (D 49)		☐	☐
Fluoride (dissolved)	**DIN 38405-D 4-1, 1985-07**	☐	☐	☐
	DIN EN ISO 10304-1: 2009-07 (D 20)	☐	☐	☐
Chloride	**DIN EN ISO 10304-1: 2009-07 (D 20)**	☐	☐	☐
	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 and D 1-2: 1985-12	☐	☐	☐
	DIN 38405-D 1-3 and D 1-4: 1985-12		☐	☐
Sulphate	**DIN EN ISO 10304-1: 2009-07 (D 20)**	☐	☐	☐
	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**	☐	☐	☐
	DIN EN ISO 14403-1: 2012-10 (D 2)	☐	☐	☐
	DIN EN ISO 14403-2: 2012-10 (D 3)	☐	☐	☐
	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)	☐	☐	☐
	DIN 38405-D 7: 2002-04		☐	☐

Parameter	Method	Was	Sur	Raw
Chromium(VI)	**DIN 38405-D 24: 1987-05**	☐	☐	☐
	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)			☐
Sulphide (readily liberated)	**DIN 38405-D 27: 1992-07**	☐	☐	☐

Section 3: Elemental analysis

Not used

Section 4/5: Group and sum parameters

Parameter	Method	Was	Sur	Raw
Biological oxygen demand (BOD_5)	**DIN EN 1899-1: 1998-05 (H 51)**	☐		
	DIN EN 1899-2: 1998-05 (H 52)		☐	
Chemical oxygen demand (COD)	**DIN 38409-H 41: 1980-12**	☐		
	DIN 38409-H 44: 1992-05		☐	
	DIN ISO 15705: 2003-01 (H 45)		☐	
Phenol index	**DIN 38409-H 16-2: 1984-06**	☐	☐	☐
	DIN 38409-H 16-1: 1984-06		☐	☐
	DIN EN ISO 14402: 1999-12 (H 37) Method as per section 4	☐	☐	☐
Filterable solids	**DIN EN 872: 2005-04 (H 33)**	☐	☐	
	DIN 38409-H 2-3: 1987-03		☐	
Acid and base capacity	DIN 38409-H 7: 2005-12		☐	☒
Total organic carbon (TOC)	**DIN EN 1484: 1997-08 (H 3)**	☐	☐	☐
Dissolved organic carbon (DOC)	DIN EN 1484: 1997-08 (H 3)		☐	☐
Total bound nitrogen (TN_b)	**DIN EN 12260: 2003-12 (H 34)**	☐	☐	☐
	DIN EN ISO 11905-1: 1998-08 (H 36)	☐	☐	☐
Adsorbable organic halogens (AOX)	**DIN EN ISO 9562: 2005-02 (H 14)**	☐	☐	☐

Section 6: Gas chromatographic methods

Not used

Section 7: HPLC methods

Not used

Section 8: Microbiological methods

Not used

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

Not used

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

Not used

9 List of test methods for the SPECIALIST MODULE FOR WASTE 2018-05

Revised: LAGA, May 2018

Test area 1: Sewage sludge

	Sections / Parameters	**Basis /** Methods	
		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)**	☒
b)	**Sample preparation**	**DIN 19747 (07.09)**	☒

Sections 1.2 to 1.8

Not used

Test area 2: Base

	Sections / Parameters	**Basis /** Methods	
		AbfKlärV and BioAbfV	
2.1	**Sampling and sample preparation**	**Section 32 (2) AbfKlärV and Section 9 BioAbfV**	

	Sections / Parameters	**Basis /** Methods	
a)	**Sampling**	**DIN ISO 10381-1 (08.03) and DIN ISO 10381-4 (04.04)**	☒
b)	**Sample preparation**	**DIN ISO 19747 (07.09)**	☒

Sections 2.2 to 2.4

Not used

Test area 3: Biowaste

	Sections/ Parameter	**Basis/** Method	
		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)**	☒
b)	**Sample preparation**	DIN 19747 (07.09) in conjunction with Annex 3, Section 1.3.3	☒
		DIN EN 13040 (02.07)	☐

Sections 3.2 to 3.4

Not used

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

*) 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 area.

Test area 4: Waste oil, insulating liquid

Not used

Test area 5: Landfill waste

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

Sections 5.2 to 5.4

Not used

Test area 6: Wood waste

	Sections/ Parameter	**Basis/** Method	
		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**	☒
b)	**Sample preparation**	DIN 19747 (07.09) in conjunction with **Annex IV No. 1.3**	☐
	Preparation of laboratory sample	DIN 19747 (07.09) in conjunction with **DIN 51701- 3 (08.85)**	☒
	Moisture content	**DIN 52183 (11.77)**	☐

Sections 6.2 to 6.4

Not used

Abbreviations used:

AbfKlärV	Klärschlamm-Verordnung (German Sewage Sludge Ordinance)
AltholzV	German Waste Wood Ordinance
DEV	Deutsche Einheitsverfahren zur Wasser-, Abwasser- und Schlammuntersuchung (German standard methods for analysis of water, waste water and sludge)
DIN	Deutsches Institut für Normung e. V. (German Institute for Standardization)
DVWK	Deutscher Verband für Wasserwirtschaft und Kulturbau (German Association for Water Management and Land Improvement)
EN	European standard
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
SOP XXX	Standard operating procedure (in-house method of the SGS Institut Fresenius Group)
TrinkwV	German Drinking Water Ordinance
LAGA	Bund-/Länderarbeitsgemeinschaft Abfall (Regional Working Group on Waste)
LAWA	Bund-/Länderarbeitsgemeinschaft Wasser (Federal/Regional Working Group on Water)