

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-14165-01-00 according to DIN EN ISO/IEC 17025:2005

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Holder of certificate:

**LUFA Nord-West, Zentrale
Jägerstraße 23 – 27, 26121 Oldenburg, Germany**

with its institutes

**LUFA Nord-West, Institut für Futtermittel, Institut für Boden und Umwelt
Jägerstraße 23 – 27, 26121 Oldenburg**

**LUFA Nord-West, Institut für Tiergesundheit
Ammerländer Heerstraße 123, 26129 Oldenburg**

**LUFA Nord-West, Institut für Lebensmittelqualität
Ammerländer Heerstraße 115-117, 26129 Oldenburg**

**LUFA Nord-West, Institut für Boden und Umwelt, Institut für Düngemittel
und Saatgut
Finkenborner Weg 1a, 31787 Hameln**

Tests in the fields:

**sampling of untreated water and drinking water; chemical tests in accordance
with the Drinking Water Ordinance, sampling of water, waste water, water from standing waters,
running waters, rainwater and seepage water, cooling water, sludge and sediments; Sampling of
industrial water according to §3 (8) 42nd BImSchV, physical, physico-chemical, chemical and
microbiological investigations of water, waste water, surface water, water from swimming pools
and bathing facilities, bathing waters, rainwater, seepage water, livestock water, irrigation water,
sludge and sediments; sampling of agricultural soils; physical, physico-chemical, chemical and
microbiological tests of agricultural soils, horticultural growing media, soils, grounds and peats;
sampling of sewage sludge and soils in accordance with the Sewage Sludge Ordinance; sampling of**

biowaste in accordance with Biowaste Ordinance (BioAbfV); physical, physico-chemical and chemical tests of soils, sewage sludge, compost, dust, waste materials and recyclable materials, biowaste, biogas and fertilisers; sampling-planning in accordance with Federal Soil Conservation Ordinance (BBodSchV); Sampling and analysis of contaminated sites and contaminated sites suspected; sampling, analysis and deposit of waste in accordance with German Landfill Ordinance Annex 4; physical, physico-chemical, chemical, sensory, molecular-biological, microbiological and immunological tests of milk, dairy products, selected foods and fats together with hygienic status controls; detection of mastitis pathogens in milk samples; physical, physico-chemical, chemical, sensory and microbiological investigations of animal feedstuffs, harvested crops and plants; molecularbiological tests of plants, foods and animal feedstuffs; diagnosis of varieties; determination of organic and inorganic gaseous and particulate airborne constituents in emissions; determination (sampling and analysis) of selected organic and inorganic gaseous and particulate airborne constituents in immissions; sampling and measurement of odor in emissions and immissions;

Technical modules water, soil and contaminated sites and waste;

Technical module immission control

Veterinary medicine

Testing areas: Microbiology, Virology, Parasitology, Immunology

Abbreviations used: see last page

*Within the given testing field marked with *, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the free choice of standard or equivalent testing methods. The listed testing methods are exemplary.*

*Within the given testing field marked with **, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, the modification, development and refinement of testing methods. The listed testing methods are exemplary.*

The testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use standards or equivalent testing methods listed here with different issue dates. This does not apply for the technical modules.

The testing laboratory maintains a current list of all testing methods within the flexible scope of accreditation.

The test and sampling procedures are identified with the following symbols for the locations of the testing institutes where these are performed:

- 1 Oldenburg site, Jägerstraße 23-27**
Institut für Futtermittel (IfF)
Institut für Boden und Umwelt (IfB)
- 2 Oldenburg site, Ammerländer Heerstraße 123**
Institut für Tiergesundheit (IfT)
- 3 Oldenburg site, Ammerländer Heerstraße 115-117**
Institut für Lebensmittelqualität (IfL)
- 4 Hameln site, Finkenborner Weg 1a**
Institut für Boden und Umwelt (IfB)
Institut für Düngemittel und Saatgut (IfD)

- Translation -

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1 Tests at Site 1 – Institut für Boden um Umwelt (IfB OL), Institut für Futtermittel (IfF OL)

1.1 Test of horticultural growing media, horticultural soils, horticultural grounds and peats and biowaste (compost, fermentation rests etc.)

1.1.1 Sample preparation of horticultural growing media, horticultural soils, horticultural grounds and peats and biowaste (e. g. compost)

DIN EN 13651 2002-01	Soil improvers and growing media – Extraction of calcium chloride/DTPA (CAT) soluble nutrients	IfB OL
DIN EN 13652 2002-01	Soil improvers and growing media – Extraction of water soluble nutrients and elements	IfB OL
VDLUFA I, A 13.1.1 2004	Determination of primary and trace nutrients in culture substrates with calcium chloride/DTPA extraction (CAT method)	IfB OL IfF OL
VDLUFA VII, 2.1.3 2011	Microwave-heated pressure digestion (Remark: identical with VDLUFA III, 10.8.1.2, 8th supplementary update 2012)	IfF OL

1.1.2 Gravimetric methods of horticultural growing media, horticultural soils, horticultural grounds and peats and biowaste (e. g. compost)

DIN EN 12580 2014-02	Soil improvers and growing media – Determination of a quantity (Modification: <i>also as on-site parameter</i>)	IfB OL
DIN EN 13039 2012-01	Soil improvers and growing media – Determination of organic matter content and ash	IfB OL
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	IfB OL
VDLUFA I, A 2.1.1 2001	Determination of water content by dehumidification in the drying closet	IfB OL

DIN EN 13039 2012-01	Soil improvers and growing media – Determination of organic matter content and ash	IfB OL
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	IfB OL

VDLUFA I, A 2.1.1 2001	Determination of water content by dehumidification in the drying closet	IfB OL
VDLUFA I, A 15.2 1991	Determination of ash content and organic matter in peaty soils	IfB OL

- Translation -

1.1.3 Volumetric, titrimetric and potentiometric methods of horticultural growing media, horticultural soils, horticultural grounds and peats and biowaste (e. g. compost)

DIN EN 13037 2012-01	Soil improvers and growing media – Determination of pH	IfB OL
DIN EN 13038 2012-01	Soil improvers and growing media – Determination of electrical conductivity	IfB OL
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	IfB OL
DIN EN 13041 2012-01	Soil improvers and growing media – Determination of physical properties – Dry bulk density, air volume, water volume, shrinkage value and total pore space	IfB OL
VDLUFA I, A 5.1.1 2016	Determination of pH	IfB OL
VDLUFA I, A 5.3.1 1991	Gas volumetric determination of carbonate	IfF OL
VDLUFA I, A 13.2.1 1991	Bulk density (volume weight) without bulky components <i>(modified sample preparation)</i>	IfB OL
VDLUFA I, A 13.2.2 1991	Bulk density (volume weight) with bulky components <i>(modified sample preparation)</i>	IfB OL
VDLUFA I, A 13.4.1 1991	Determination of salinity in horticultural soils, grounds and substrates in water extract (identical with: VDLUFA I, A 10.1.1, 1991 – Determination of salinity in soils, horticultural grounds and substrates)	IfB OL
VDLUFA I, A 13.4.3 1991	Determination of water-soluble sodium and chloride in substrates and composts	IfB OL

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1.1.4 Spectroscopic methods (UV, VIS, AAS, ICP, IR) methods of horticultural growing media, horticultural soils, horticultural grounds and peats and biowaste (e. g. compost)

VDLUFA I, A 6.1.1.1 2002	Determination of nitrogen as nitrate by UV absorption (Modification: <i>photometric</i>)	IfB OL
VDLUFA I, A 6.1.2.1 2002	Determination of ammonia nitrogen	IfB OL
VDLUFA I, A 6.1.4.1 2002	Determination of mineral nitrogen (nitrate and ammonia) in soil profiles (N_{min} laboratory method)	IfF OL
VDLUFA I, A 6.2.1.1 2012	Determination of phosphorus and potassium in Calcium acetate lactate (CAL) extract	IfB OL IfF OL
VDLUFA I, A 6.2.4.1 1991	Determination of magnesium accessible to plants in calcium chloride extract	IfB OL
VDLUFA I, A 6.4.1 2002	Magnesium, sodium and trace nutrients copper, manganese, zinc and Boron with calcium chloride/DTPA extraction (here: <i>only Mg, Na and Mn</i>)	IfF OL IfB OL
VDLUFA I, A 7.1.1 1997	Determination of boron taken up by plants (soluble in hot water)	IfF OL
VDLUFA I, A 13.1.1 2004	Determination of primary and trace nutrients in culture substrates with calcium chloride/DTPA extraction (CAT method)	IfB OL IfF OL

1.1.5 Other methods of horticultural growing media, horticultural soils, horticultural grounds and peats and biowaste (e. g. compost)

DIN EN 15936 2012-11	Sludge, treated biowaste, soil and waste - Determination of total organic carbon (TOC) by dry combustion	IfB OL
DIN EN 16168 2012-11	Sludge, treated biowaste and soil - Determination of total nitrogen using dry combustion method (Modification: <i>Determination in fermentation substrates, input materials for biogas plants, fermentation residues and agricultural fertilisers</i>)	IfB OL
DIN 11540 2005-04	Peats and peat products for horticulture and landscape gardening – Test methods, properties, specifications (here only 6.9: <i>Determination of grain size composition by sieve analysis</i>)	IfB OL

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DIN 19539 2016-12	Determinantion of solids - temperature-dependent differentiation of the total carbon (TOC ₄₀₀ , ROC, TIC ₉₀₀)	IfF OL
Analysereeks PPO 22.06.1999	Aangepast veen onderzoek (Remark: available in German as LUFA Nord-West AA 1/1-604 Peat raw material testing and determination of physical properties of substrates and substrate source materials after PBG Naaldwijk)	IfB OL
Analysereeks PPO 22.06.1999	Gravimetrisch vochtgehalte en organische stofffractie (Remark: available in German as LUFA Nord-West 1/1-617 Determination of water content and dry substance and determination of organic matter content and residue on ignition)	IfB OL
Analysereeks PPO 22.06.1999	Aangepast beberkt fysisch onderzoek potgrond (Remark: available in German as LUFA Nord-West AA 1/1-604 Peat raw material testing and determination of physical properties of substrates and substrate source materials after PBG Naaldwijk)	IfB OL
BGK Methods Manual Chapter IV A3 2006	Plant tolerance in the microgreen test with summer barley	IfB OL
BGK Methods Manual Chapter IV B1 2006-09	Content of germinable seed material and plant parts capable of producing shoots	IfB OL
VDLUFA I, A 4.1.3.2 2016	Direct determination of organic carbon with combustion at 550 °C and gas analysis	IfB OL
VDLUFA I A, 10.2.1 2016	Seedling test for Detection of substances harmful to plants in horticultural substrates and and substrate source materials	IfB OL
VDLUFA I, A 13.5.2 2004	Detection of germinable seed material and plants capable of producing shoots in horticultural substrates and substrate source materials	IfB OL

- Translation -

1.2 Tests of harvested crops, input stuffs/input materials for biogas plants, fermenter contents, digested animal manure, fermentation substrates, fermentation residues and agricultural fertilisers

1.2.1 Sampling and sample preparation in harvested crops, input stuffs/input materials for biogas plants, fermenter contents, digested animal manure, fermentation substrates, fermentation residues/fermentation rests and agricultural fertilisers

BioAbfV Annex 3 Number 1.1 1998	Tests of untreated and treated biowastes, Sampling	IfB OL
BioAbfV Annex 3 Number 1.2 1998	Tests of untreated and treated biowastes, Sample preparation	IfB OL
VDLUFA VII 2.1.1 2011	Wet digestion under pressure (Remark: identical with VDLUFA III, 10.8.1., 8th supplementary update 2012)	IfF OL
VDLUFA VII, 2.1.3 2011	Microwave-heated pressure digestion (Remark: identical with VDLUFA III, 10.8.1.2, 8th supplementary update 2012)	IfF OL

1.2.2 Volumetric, titrimetric and potentiometric methods in harvested crops and input stuffs/input materials for biogas plants, fermenter contents, digested animal manure, fermentation substrates, fermentation residues/fermentation rests and agricultural fertilisers

DIN EN ISO 10523 (C 5) 2012-04	Water quality – Determination of pH <i>(no specification of measurement temperature in test report/findings)</i>	IfB OL
DIN 38409-7 (H 7) 2005-12	Determination of acid and base-neutralizing capacities	IfB OL
VDLUFA I, A 5.1.1. 2016	Determination of pH (Deviating matrix – Measurement in original substance) (Remark: in conformity with old VDLUFA II, 9.29)	IfB OL
VDLUFA II, 3.5.1.1 2004	Determination of total nitrogen, KJELDAHL-method In the absence of nitrate-nitrogen	IfF OL
VDLUFA II, 11.14 1995	Determination of salinity from electrical conductivity and determination of pH in water weight method	IfB OL

- Translation -

1.2.3 Gravimetric methods in harvested crops, input stuffs/input materials for biogas plants, fermenter contents, digested animal manure, fermentation substrates, fermentation residues/fermentation rests and agricultural fertilisers

VDLUFA I, A 2.1.1
1991 Determination of water content (and dry matter) by dehumidification in the drying closet IfB OL

VDLUFA II, 9.28.1
1976 Determination of total moisture: Determination as weight loss at 105 °C
(standard withdrawn) IfB OL

VDLUFA II, 10.1
2014 Determination and evaluation of organic matter, determination of residue on ignition IfB OL

1.2.4 Chromatographic methods in harvested crops, input stuffs/input materials for biogas plants, fermenter contents, digested animal manure, fermentation substrates, fermentation residues/fermentation rests and agricultural fertilisers

LUFA Nord-West
AA 1/3A-046
2016-10 Determination of organic acids in silage and distillates by ion chromatography IfF OL

1.2.5 Spectroscopic methods (AAS, ICP, UV, VIS, flame photometer, IR) in harvested crops, input stuffs/input materials for biogas plants, fermenter contents, digested animal manure, fermentation substrates, fermentation residues/fermentation rests and agricultural fertilisers

DIN EN ISO 11885 (E 22)
2009-09 Water quality – Determination of selected elements by inductively coupled plasma atomic emission spectroscopy (ICP-OES) IfB OL
 IfF OL

DIN EN ISO 17294-2
2017-01 Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes
(trace elements in digested animal manure) IfB OL
 IfF OL

DIN EN 15936
2012-11 Sludge, treated biowaste, soil and waste - Determination of total organic carbon (TOC) by dry combustion IfF OL

DIN EN 16168
2012-11 Sludge, treated biowaste and soil - Determination of total nitrogen using dry combustion method IfF OL

DIN 19539
2016-12 Determination of solids - temperature-dependent differentiation of the total carbon (TOC₄₀₀, ROC, TIC₉₀₀) IfF OL

1.2.6 Other methods in harvested crops, input stuffs/input materials for biogas plants, fermenter contents, digested animal manure, fermentation substrates, fermentation residues/fermentation rests and agricultural fertilisers

BGK Methods Manual C3 2006-09	Total content of organic acids	IfB OL
VDI Guideline 4630 2016-11	Fermentation of organic materials Characterisation of the substrate, sampling, collection of material data, fermentation tests (here Section 7: <i>Fermentation tests – Batch process</i>)	IfB OL
VDLUFA II, 3.2.6 1995	Determination of ammonia nitrogen – Electrometric method with the gas-sensitive NH_3 electrode	IfB OL

1.3 Chemical, physico-chemical and sensory tests of animal feedstuffs, harvested crops, plants and foodstuffs

1.3.1 Sample preparation of animal feedstuffs, harvested crops, plants and foodstuffs

VDLUFA III, 2 1983	Processing of submitted samples and preparation of samples for analysis (includes 2.1.1 to 2.2.4)	IfF OL
VDLUFA VII 2.1.1 2011	Wet digestion under pressure (Remark: identical with VDLUFA III, 10.8.1.1, 8th supplementary update 2012)	IfF OL
VDLUFA VII, 2.1.3 2011	Microwave-heated pressure digestion (Remark: identical with VDLUFA III, 10.8.1.2, 8th supplementary update 2012)	IfF OL

1.3.2 Gravimetric determination of ingredients in animal feedstuffs, harvested crops and plants *

ASU F 0084 2011-06	Tests of feedstuffs - Determination of acidic detergent fibre (ADF) and acidic detergent fibre following incineration (ADForm) in animal feedstuffs (abbreviated version VDLUFA Method 6.5.2 "Determination of acidic detergent fibre (ADF) and acidic detergent fibre following incineration (ADForm)")	IfF OL
VO (EG) 152/2009 Annex III, A	Determination of moisture content (Remark: content identical with that of VDLUFA III, 3.1, 1976 and BVL F 0001(EG):2010-07)	IfF OL

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VO (EG) 152/2009 Annex III, H	Determination of untreated oil and fat content (Remark: content identical with that of VDLUFA III, 5.1.1; 1988 and ASU F 0009(EG):2010-07)	IfF OL
VO (EG) 152/2009 Annex III, I	Determination of crude fibre content (Remark: content identical with that of VDLUFA III; 6.1.1, 1993 and ASU F 0010(EG):2010-07)	IfF OL
VO (EG) 152/2009 Annex III, M	Determination of raw ash content (Remark: content identical with that of VDLUFA III, 8.1; 1976 and ASU F 0014(EG):2010-07)	IfF OL
VO (EG) 152/2009 Annex III, N	Determination of insoluble ash in hydrochloric acid (Remark: content identical with that of VDLUFA III, 8.2; 1976 und ASU F 0015(EG):2010-07)	IfF OL
VDLUFA III, 5.4.8 1976	Determination of unsaponifiable components in fats	IfF OL
VDLUFA III, 5.5.1 1983	Determination of contaminants insoluble in petroleum ether in fats and oils of animal feedstuffs	IfF OL
VDLUFA III, 6.5.1 2012	Determination of neutral detergent fibre following amylase treatment (aNDF) and following amylase treatment and incineration (aNDFom)	IfF OL
VDLUFA III, 6.5.3 2012	Determination of acidic detergent lignin (ADL)	IfF OL
VDLUFA III, 8.4 1988	Determination of raw ash in mineral animal feedstuffs	IfF OL

1.3.3 Titrimetric determination of ingredients and quality parameters in animal feedstuffs, harvested crops and plants *

VO (EG) 152/2009 Annex III, C	Determination of raw protein content (Remark: content identical with that of VDLUFA III, 4.1.1; 1993 and ASU F 0003(EG):2010-07)	IfF OL
VO (EG) 152/2009 Annex III, J	Determination of sugar content (Remark: content identical with that of VDLUFA III, 7.1.1; 1976 and ASU F 0011(EG):2010-07)	IfF OL
VO (EG) 152/2009 Annex III, K	Determination of lactose content (Remark: content identical with that of VDLUFA III, 7.1.4, 1976 and ASU F 0012(EG):2010-07)	IfF OL

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VDLUFA III, 4.2.1 1976	Determination of raw protein soluble in fermentation	IfF OL
VDLUFA III, 4.4.1 1976	Determination of pure albumen - Method according to Barnstein	IfF OL
VDLUFA III, 5.2.1 1976	Determination of free fatty acids	IfF OL
VDLUFA III, 5.4.3 1983	Determination of peroxide number by the method of Wheeler (Modification: <i>isooctane in place of chloroform</i>)	IfF OL
VDLUFA III, 10.5.2 1976	Determination of chlorides	IfF OL
VDLUFA III, 20.2 1976	Solubility of albumen in soya extract grist	IfF OL
VDLUFA III, 20.1 1976	Determination of urease activity in soya products	IfF OL
1.3.4 Determination of ingredients with GC/FID-methods in animal feedstuffs, harvested crops, plants and foodstuffs **		
ISO 5504 1983	Oilseeds and oilseed residues – Determination of isothiocyanates and vinyl thiooxazolidone (Modification: <i>here only ITC</i>)	IfF OL
ASU F 0063 2011-06	Tests of feedstuffs - Determination of 1,2-propanediol (propylene glycol) in animal feedstuffs – Gas chromatographic method (abbreviated version of VDLUFA method 14.24.1 “Determination of 1,2-propanediol (propylene glycol)”)	IfF OL
ASU F 0100 2013-04	Tests of feedstuffs - Determination of free glycerine in animal feedstuffs and crude glycerine (abbreviated version of VDLUFA method 14.25.1 – “Determination of free glycerine and crude glycerine”)	IfF OL
ASU L 01.00-87 2012-01	Tests of foodstuffs - Determination of milk fat purity by gas chromatographic analysis of triglycerides (Reference method)	IfF OL

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LUFA Nord-West Determination of methanol in glycerine by GC IfF OL
AA 1/3A-038 (*modification of VDLUFA III, 14.24.1 procedure*)
2012-11

1.3.5 Determination of pesticides/-residues with GC/MS-methods in animal feedstuffs, harvested crops, plants and foodstuffs

ASU L 00.00-115 Tests of foodstuffs - Determination of pesticide residues IfF OL
2018-10 in vegetable foodstuffs- GC-MS(/MS) or
LC-MS/MS following acetonitrile extraction/apportionment and
purification with dispersive SPE (QuEChERS)

1.3.6 Determination of pesticides/-residues with LC/MS-methods in animal feedstuffs, harvested crops, plants and foodstuffs **

ASU L 00.00-115 Tests of foodstuffs - Determination of pesticide residues IfF OL
2018-10 in vegetable foodstuffs- GC-MS(/MS) or
LC-MS/MS following acetonitrile extraction/apportionment and
purification with dispersive SPE (QuEChERS)

LUFA Nord-West Determination of residues from highly polar pesticides IfF OL
AA1/3A-054 in foodstuffs of vegetable origin
2014-08

1.3.7 HPLC methods in animal feedstuffs, harvested crops, plants and foodstuffs

VO (EG) No. 152/2009 Determination of tryptophan content in feedstuffs IfF OL
Annex III. G

DIN EN 15791-
2009-12 Animal feeding stuffs – Determination of deoxynivalenol
in animal feed – High performance liquid chromatographic-
(HPLC)method with UV detection and immunoaffinity column
clean-up IfF OL

DIN EN 15792-2009-12 Animal feeding stuffs – Determination of zearalenone in animal feed – High performance liquid chromatographic method with fluorescence detection and immunoaffinity column clean-up IfF OL

ASU L 26.00-1 Test of foodstuffs – Determination of nitrate content
2018-10 in vegetable products – HPLC/IC method IfF OL

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VDLUFA III, 4.11.4 1993	Determination of DL-2-hydroxy-4-methylmercaptoputyric acid following hydrolysis (total MHA®)	IfF OL
VDLUFA III, 14.22.1 2006	Determination of monensin sodium (HPLC method)	IfF OL
VDLUFA III, 14.23.1 2006	Determination of salinomycin sodium (HPLC method)	IfF OL
VDLUFA III, 16.1.4 1997	Determination of aflatoxin B ₁ : clean-up of extract by immunoaffinity chromatography	IfF OL
LUFA Nord-West AA 1/3-027 2017-11	Determination of vitamin D3 by the HPLC method <i>(modification of VDLUFA III, 13.8.1)</i>	IfF OL
LUFA Nord-West AA 1/3-029 2017-11	Determination of vitamin A and vitamin E from a digestion by the HPLC method <i>(modification of the procedure (EC) 152/2009, Annex IV, A, B / VDLUFA III, 13.1.2 and 13.5.4)</i>	IfF OL
LUFA Nord-West AA 1/3-032 2016-10	Determination of ochratoxin A following immunoaffinity column clean-up – HPLC method <i>(modification of DIN EN 16007:2011-10)</i>	IfF OL

1.3.8 Determination of amino acid and organic acid with Ion chromatographic methods in animal feedstuffs, harvested crops, plants and foodstuffs

(EC) 152/2009 Annex III, F	Determination of amino acid content (except tryptophane) <i>(modification of the procedures VDLUFA III, 4.11.1, 4.11.5 and 4.11.6 applies here also for commercial products, restricted to lysine, methionine, cystine and threonine)</i>	IfF OL
LUFA Nord-West AA 1/3A-046 2013-11	Ion chromatographic determination of organic acids in silage and distillates	IfF OL
LUFA Nord-West AA 1/3A-047 2016-10	Ion chromatographic determination of organic acids in animal feedstuffs	IfF OL

1.3.9 Photometric methods and infrared spectroscopy in animal feedstuffs, harvested crops, plants and foodstuffs

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ASU F 0041 2010-09	Tests of feedstuffs - Determination of phytase activity (Takeover of the standard of the same name DIN EN ISO 30024, version November 2009)	IfF OL
ASU F 0065 2011-06	Tests of feedstuffs - Determination of phytase activity in animal feedstuff mixtures – Photometric method (abbreviated version of VDLUFA method 27.1.2 "Determination of phytase activity in animal feedstuffs and pre-mixtures")	IfF OL
ASU L 00.00-49-1 1999-11	Tests of foodstuffs - Low-fat foodstuffs – Determination of dithiocarbamate and thiouramdisulphide residues – Part 1: Spectrophotometric method	IfF OL
VDLUFA III, 31.2 2004	Test of silage (grass, maize) by near-infrared spectroscopy in the VDLUFA network. (Modification: <i>also for other animal feedstuffs, e.g. grain, corn cob mix, grain maize, GPS, hay, fresh grass, soya and silage mixtures, also with own calibrations</i>)	IfF OL

1.3.10 Determination of inorganic parameters by atomic absorption spectrometry in animal feedstuffs, harvested crops, plants and foodstuffs *

DIN EN ISO 5961 (E19) 1995-05	Water quality - Determination of cadmium by atomic absorption spectrometry	IfF OL
DIN EN ISO 15586 (E4) 2004-02	Water Quality - Determination of trace elements using atomic absorption spectrometry with graphite furnace	IfF OL
DIN 38406-6 (E 6) 1998-07	Determination of lead by atomic absorption spectrometry (AAS)	IfF OL
DIN 38406-7 (E7) 1991-09	Determination of copper by atomic absorption spectrometry (AAS)	IfF OL
DIN 38406-8 (E8) 1980-10	Determination of Zinc (atomic absorption spectroscopy method)	IfF OL
ASU F 0021(EG) 2010-09	Tests of feedstuffs - Determination of trace element contents of iron, copper, manganese and zinc in animal feedstuffs by atomic absorption spectroscopy – Annex IV of Regulation (EC) no. 152/2009 of the Commission of 27 January, 2009 for the definition of sampling procedures and analytical methods for the official test of animal feedstuffs (ABI. EC L 54/1 of 26.02.2009) (Remark: content identical with that of VDLUFA III, 11.1.2; 1983, VDLUFA III, 11.3.2; 1983, VDLUFA III, 11.4.2; 1983 and VDLUFA III, 11.5.2; 1983)	IfF OL

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ASU F 0037 2010-09	Tests of feedstuffs – Determination of the contents of calcium, copper, iron, magnesium, manganese, potassium, sodium and zinc – Method using atomic absorption spectrometry (Takeover of the standard of the same name DIN EN ISO 6869, version March 2001)	IfF OL
ASU F 0060 2013-04	Tests of feedstuffs - Determination of selenium by hydride generation atomic absorption spectrometry (HG-AAS) after microwave digestion (digestion with 65 % nitric acid and 30 % hydrogen peroxide); (Takeover of the standard of the same name DIN EN 16159, version April 2012)	IfF OL
ASU F 0088 2013-04	Tests of feedstuffs - Determination of cadmium and lead in animal feedstuffs by atomic absorption spectrometry with graphite furnace (GF-AAS) following pressure digestion (Takeover of the standard of the same name DIN EN 15550, version December 2007)	IfF OL
ASU F 0089 2013-04	Tests of feedstuffs - Determination of mercury by cold-vapour atomic absorption spectrometry (CVAAS) after microwave pressure digestion (extraction with 65 % nitric acid and 30 % hydrogen peroxide) (Takeover of the standard of the same name DIN EN 16277, version September 2012)	IfF OL
ASU F 0090 2013-04	Tests of feedstuffs - Determination of arsenic by hydride generation atomic absorption spectrometry (HG-AAS) after microwave pressure digestion (digestion with 65 % nitric acid and 30 % hydrogen peroxide) (Takeover of the standard of the same name DIN EN 16206, version May 2012)	IfF OL
VDLUFA III, 11.6.2 2006	Determination of selenium in animal feedstuffs - Flow injection – hydride technique – AAS method	IfF OL
US EPA method 7473 2007-02	Mercury in solids and solutions by thermal decomposition, amalgamation and atomic absorption spectrophotometry (direct determination of mercury in animal feedstuffs)	IfF OL
1.3.11 Determination of inorganic parameters by inductively coupled plasma atomic emission spectroscopy (ICP-OES) in animal feedstuffs, harvested crops, plants and foodstuffs *		
DIN EN ISO 11885 (E 22) 2009-09	Water quality – Determination of selected elements by inductively coupled plasma atomic emission spectroscopy	IfF OL

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ASU F 0042 2010-09	Tests of feedstuffs - Determination of calcium, sodium, phosphorus, magnesium, potassium, iron, zinc, copper, manganese, cobalt, molybdenum, arsenic, lead and cadmium in animal feedstuffs by ICP-AES (Takeover of the standard of the same name DIN EN 15510, version October 2007)	IfF OL
ASU F 0096 2013-04	Tests of feedstuffs - Determination of calcium, sodium, phosphorus, magnesium, potassium, sulphur, iron, zinc, copper, manganese and cobalt in feedstuffs with ICP-AES after pressure digestion by ICP-AES (Takeover of the standard of the same name DIN EN 15621, version April 2012)	IfF OL

1.3.12 Determination of inorganic parameters by inductively coupled plasma mass spectrometry (ICP-MS) in animal feedstuffs, harvested crops, plants and foodstuffs *

DIN EN ISO 17294-2 2017-01	Water quality – Application of inductively coupled plasma mass spectrometry (ICP-MS) – Part 2: Determination of 62 elements	IfF OL
DIN EN 15763 2010-04	Foodstuffs – Determination of trace elements - Determination of arsenic, cadmium, mercury and lead in foodstuffs by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion	IfF OL
DIN 38406-29 1999-05	Determination of 61 elements by inductively coupled plasma mass spectrometry (ICP-MS) <i>(standard withdrawn)</i>	IfF OL

1.3.13 Determination of ingredients and digestibility parameters with enzymatic methods in animal feedstuffs *

ASU F 0064 2011-06	Tests of feedstuffs - Determination of gasification in animal feedstuffs according to the Hohenheim gas test (abbreviated version of VDLUFA method 25.1 "Determination of gasification according to the Hohenheim gas test")	IfF OL
VDLUFA III, 6.6.1 1997	Determination of organic substances soluble in enzymes (cellulase method)	IfF OL
VDLUFA III, 7.2.6 2012	Determination of the starch breakdown degree	IfF OL

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1.3.14 Microscopic and macroscopic methods in animal feedstuffs

VO (EG) No. 152/2009 Annex VI	Analysis for the determination of the constituents of animal origin in the official test of animal feedstuffs	IfF OL
VO (EG) No. 152/2009 Annex VI	Analysis for the determination of the constituents of animal origin in the official testing of animal feedstuffs <i>(Modification: alternatively sample preparation without sedimentation step or with chloral hydrate)</i>	IfF OL
ASU F 0073 2011-06	Tests of feedstuffs - Sample preparation for the macroscopic and microscopic testing of animal feedstuffs <i>(abbreviated version of VDLUFA method 30.1 " Sample preparation for macroscopic and microscopic tests")</i>	IfF OL
ASU F 0074 2011-06	Tests of feedstuffs - Determination of ergot content in animal feedstuffs – macroscopic and microscopic methods <i>(abbreviated version of VDLUFA method 30.2 "Determination of ergot in animal feedstuffs")</i>	IfF OL
ASU F 0075 2011-06	Tests of feedstuffs - Determination of <i>Datura</i> spp. content in animal feedstuffs – macroscopic and microscopic methods <i>(abbreviated version of VDLUFA method 30.3 " Determination of <i>Datura</i> spp. in animal feedstuffs")</i>	IfF OL
ASU F 0076 2011-06	Tests of feedstuffs - Identification and estimation of constituents in animal feedstuff mixtures – macroscopic and microscopic methods <i>(abbreviated version of VDLUFA method 30.7 " Identification and estimation of constituents in animal feedstuffs")</i>	IfF OL
VDLUFA III, 30.4 2007	Determination of rice husks in animal feedstuffs	IfF OL
VDLUFA III, 30.5 2012	Determination of castor oil seed coats	IfF OL
VDLUFA III, 30.6 2007	Determination of fruit stones in animal feedstuffs	IfF OL
VDLUFA III, 30.8 2012	Determination of <i>Ambrosia astemisifolia</i> L.	IfF OL
LUFA Nord-West AA 1/3-217 2016-12	Proof of packaging material in animal Feedstuffs	IfF OL

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1.3.15 Electrode measurement in animal feedstuffs

ASU F 0092 2013-04	Tests of feedstuffs - Determination of fluoride content after hydrochloric acid treatment by ion-sensitive electrode method (ISE) (Takeover of the standard of the same name DIN EN 16279, version September 2012)	IfF OL
VDLUFA III, 17.3.2 2006	Determination of fluorine in herbal material by the ion-sensitive electrode method	IfF OL
VDLUFA III, 18.1 1976	Determination of pH	IfF OL
VDLUFA VII, 2.2.2.11 2017	Determination of fluorine in plants and animal feedstuffs by the ion-sensitive electrode method	IfF OL
LUFA Nord-West AA 1/3-155 2008-05	Determination of pH in commercial feedstuff	IfF OL

1.3.16 Other tests in animal feedstuffs

VO (EG) 152/2009 Annex III, L	Determination of starch content (Remark: content identical with that of VDLUFA III, 7.2.1, 1976 and ASU F 0013(EG):2010-07)	IfF OL
VDLUFA III, 22.4 1988	Refractometric determination of dry substance content in molasses	IfF OL
r-biopharm, Vers. 2012-09 Art. No. R1401	Ridascreen® Zearalenon	IfF OL
r-biopharm, 2016-09 Art.No. R5901 (96 wells) Art. No. R5902 (48 wells)	Ridascreen® Fast DON	IfF OL
LUFA Nord-West AA 1/3-185 2015-02	Sensory evaluation of locally produced animal feedstuffs	IfF OL

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1.4 Microbiological and molecular-biological methods for the test of animal feedstuffs, harvested crops, plants and foodstuffs, fertilisers, substrates, secondary raw material fertilisers and environmental samples

1.4.1 Microbiological and molecular-biological test of Untersuchung bacteria, yeasts and molds with cultural methods in animal feedstuffs, harvested crops, plants and foodstuffs and environmental samples **

DIN ISO 21528-2 2017-09	Microbiology of food and animal feeding stuffs – Horizontal methods for the detection and enumeration of Enterobacteriaceae – Part 2: Colony-count method	IfF OL
DIN EN ISO 6579-1 2017-07	Microbiology of the food chain – Horizontal method for the detection, enumeration and serotyping of Salmonella – Part 1: Detection Salmonella spp.	IfF OL
ASU F 0069 2011-06	Tests of feedstuffs - General guidelines for the determination of germ content in animal feedstuffs by solid nutritive substances (abbreviated version of VDLUFA method 28.1.1 " General guidelines for the determination of germ content in animal feedstuffs by solid nutritive substances")	IfF OL
ASU F 0070 2011-06	Tests of feedstuffs - Enumeration of bacteria, yeast, mould and black fungus in animal feedstuffs (abbreviated version of VDLUFA method 28.1.2 "Enumeration of bacteria, yeast, mould and black fungus")	IfF OL
ASU F 0071 2011-06	Tests of feedstuffs - Identification of bacteria, yeast, mould and black fungus in animal feedstuffs as product-typical or indicator signs for spoilage (abbreviated version of VDLUFA method 28.1.3 "General guidelines for the determination of bacteria, yeast, mould and black fungus as product-typical or indicator signs for spoilage")	IfF OL
ASU F 0072 2011-06	Tests of feedstuffs - General guidelines for the microbiological quality evaluation of animal feedstuffs (abbreviated version of VDLUFA method 28.1.4 "General guidelines for microbiological quality evaluation")	IfF OL
ASU L 00.00-20 2018-03	Tests of foodstuff – Horizontal method for the detection, enumeration and serotyping of Salmonella .-. Part 1: Detection of Salmonella spp. (Takeover of the standard of the same name DIN EN ISO 6579-1, July 2017)	IfF OL

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ASU L 00.00-33 2006-09	Tests of foodstuffs - Horizontal method for the enumeration of presumptive <i>Bacillus cereus</i> – Colony-count technique at 30 C (Takeover of the standard of the same name DIN EN ISO 7932, version March 2004)	IfF OL
ASU L 00.00-55 2004-12	Tests of foodstuffs – Method for the enumeration of coagulase-positive staphylococci (<i>Staphylococcus aureus</i> and other species) in foodstuffs – Part 1: Technique using Baird-Parker agar medium (Takeover of the standard of the same name DIN EN ISO 6888-1, version December 2003)	IfF OL
ASU L 00.00-57 2006-12	Tests of foodstuffs – Method for the enumeration of <i>Clostridium perfringens</i> in foodstuffs - Colony-count technique (Takeover of the standard of the same name DIN EN ISO 7937, version November 2004)	IfF OL
ASU L 00.00-88/1 2015-06	Tests of foodstuffs – Horizontal method for the enumeration of microorganisms – Part 1: Colony-count technique at 30 °C (Takeover of the standard of the same name DIN EN ISO 4833-1, version December 2013)	IfF OL
ASU L 00.00-88/2 2015-06	Tests of foodstuffs – Horizontal method for the enumeration of microorganisms – Part 2: Colony-count technique at 30 °C by the surface plating technique (Takeover of the standard of the same name DIN EN ISO 4833-2, version May 2014)	IfF OL
ASU L 01.00-37 1991-12	Tests of foodstuffs – Enumeration of yeast and mould in milk and milk products – Reference method	IfF OL
Guidelines for controlling laying hen flocks for <i>S. enteritidis</i> , <i>S. typhimurium</i>	Detection of <i>Salmonella typhimurium</i> and <i>Salmonella enteritidis</i>	IfF OL
LUFA Nord-West AA 1/3-515 2014-01	Qualitative and quantitative proof of clostridia	IfF OL
LUFA Nord-West AA 1/3-523 2011-09	Inhibitor test; EEC four-plate test	IfF OL

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LUFA Nord-West AA 1/3-568 2017-06	Semi-quantitative test of yeast and mould enumeration in milk and milk products in hygienic status samples	IfF OL
LUFA Nord-West AA 1/3-569 2017-06	Enterobacteriaceae testing of hygienic status samples (environmental samples, samples from the surroundings)	IfF OL
LUFA Nord-West AA 1/3-570 2017-06	Test of hygienic status controls for the detection of salmonella (environmental samples, samples from the surroundings)	IfF OL

1.4.2 Microbiological and molecular-biological test of bacteria, yeasts and molds with cultural methods in fertilisers, substrates, secondary raw material fertilisers **

DIN ISO 21528-2 2017-09	Microbiology of food and animal feeding stuffs – Horizontal methods for the detection and enumeration of Enterobacteriaceae – Part 2: Colony-count method	IfF OL
DIN 38414-13 (S 13) 1992-03	Detection of salmonellae in disinfected sewage sludge	IfF OL
BGK Methods Manual Chapter IV, C1 2006-09	Epidemiological hygiene: Testing of products for salmonella	IfF OL
BGK Methods Manual Chapter IV, C2 2006-09	Epidemiological hygiene: Total aerobic bacterial count (at 37 °C; GBZ)	IfF OL
BGK Methods Manual Chapter IV, C3 2006-09	Epidemiological hygiene: Escherichia coli (<i>E. coli</i>)	IfF OL
BGK Methods Manual Chapter IV, C4 2006-09	Epidemiological hygiene: Determination of enterococci	IfF OL
ASU L 00.00-20 2018-03	Tests of foodstuff – Horizontal method for the detection, enumeration and serotyping of Salmonella .-. Part 1: Detection of Salmonella spp. (Takeover of the standard of the same name DIN EN ISO 6579-1, July 2017)	IfF OL

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ASU L 00.00-57 2006-12	Tests of foodstuffs – Method for the enumeration of Clostridium perfringens in foodstuffs - Colony-count technique (Takeover of the standard of the same name DIN EN ISO 7937, version November 2004)	IfF OL
ASU L 01.00-37 1991-12	Tests of foodstuffs – Enumeration of yeast and mould in milk and milk products – Reference method	IfF OL
Guidelines for controlling laying hen flocks for <i>S. enteritidis</i> , <i>S. typhimurium</i>	Detection of <i>Salmonella typhimurium</i> and <i>Salmonella enteritidis</i>	IfF OL
Memorandum Extended final production testing for microbiological parameters HBPS 1998-11	Test of epidemiological harmlessness	IfF OL
LUFA Nord-West AA 1/3-515 2014-01	Qualitative and quantitative proof of clostridia	IfF OL

1.4.3 Microbiological tests of water

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 (colony count at 22 °C and 36 °C)	IfF OL
DIN EN ISO 7899-2 (K 15) 2000-11	Water quality - Detection and enumeration of intestinal enterococci - Part 2: Membrane filtration method	IfF OL
DIN EN ISO 9308-1 (K12) 2017-09	Water quality - Enumeration of <i>Escherichia coli</i> and coliform bacteria - Part 1: Membrane filtration method for waters with low bacterial background flora	IfF OL
DIN EN ISO 9308-2 (K 6-1) 2014-06	Water quality - Enumeration of <i>Escherichia coli</i> and coliform bacteria - Part 2: Most probable number method	IfF OL
DIN EN ISO 9308-3 (K13) 1999-07	Water quality – Detection and enumeration of <i>Escherichia coli</i> and coliform bacteria in surface and waste water – Part 3: Miniaturized method (most probable number) by inoculation in liquid medium	IfF OL

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DIN EN ISO 11731 2019-03	Water quality - Detection and enumeration of Legionella	IfF OL
DIN EN ISO 11731-2 2008-06	Water quality – Detection and enumeration of Legionella – Part 2: Direct membrane filtration method for waters with low bacterial counts <i>(Norm withdrawn)</i>	IfF OL
DIN EN ISO 14189 (K 24) 2016-11	Water quality - Enumeration of Clostridium perfringens - Method using membrane filtration	IfF OL
DIN EN ISO 16266 2008-05	Water quality – Detection and enumeration of Pseudomonas aeruginosa – Method by membrane filtration	IfF OL
Enterolert®- DW/Quanti-Tray® (IDEXX) 2018-07	Detection of Enterococcus spp. (Enterolert®-DW/Quanti-Tray®)	IfF OL

1.4.4 Molecular-biological methods for the test of animal feedstuffs, foodstuffs, harvested crops and plants and derived products

1.4.4.1 Sample preparation with DNA extraction for detection of genetically modified organisms (GMO) and derived products, as well as species detection using PCR technology in animal feedstuffs, foodstuffs, harvested corps and plants *

VO (EG) 152/2009 Annex VI; point 2.2.4 EURL-AP, 2014-07	DNA extraction using „Wizard® Magnetic DNA purification system for Food“ kit	IfF OL
BIOTECON foodproof® GMO Sample Preparation Kit 06-2015	Isolation and purification of DNA from raw materials and foodstuffs of vegetable origin for PCR	IfF OL
ASU L 00.00-119 2014-02	Tests of foodstuffs – Methods of analysis for the detection of genetically modified organisms and derived products – Nucleic acid extraction (takeover of the standard DIN EN ISO 21571 with the same title, version August 2013)	IfF OL

1.4.4.2 Detection of genetically modified organisms (GMO) and derived products, as well as species detection using PCR technology in animal feedstuffs, foodstuffs, harvested corps and plants**

VDLUFA III, 29.1 2012	Molecular-biological detection of animal parts (PCR method)	IfF OL
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ASU L 00.00-31
2001-07 Tests of foodstuffs - Screening procedure for the detection of genetically modified DNA sequences in foodstuffs based on the detection of DNA sequences frequently found in genetically modified organisms IfF OL

ASU L 00.00-118
2014-02 Tests of foodstuffs - Methods of analysis for the detection of genetically modified organisms and derived products – Qualitative nucleic acid based methods (takeover of the standard DIN EN ISO 21569 with the same title, version August 2013) (also for detection of species, e.g. maize, soya, rapeseed and potato) IfF OL

ASU L 00.00-125
2008-12 Tests of foodstuffs - Detection of the CTP2-CP4-EPSPS genetic sequence for the screening of components from genetically modified organisms in foodstuffs – Construct-specific method IfF OL

LUFA Nord-West
AA 1/3-577
2018-03 PCR method for animal specific detection of DNA sequences (e.g., deer, duck turkey, horse, sheep, goat and salmon) IfF OL

1.4.4.3 Detection of genetically modified organisms (GMO) and derived products, as well as species detection using real-time PCR technology in animal feedstuffs, foodstuffs, harvested corps and plants **

VO (EG) 152/2009
Annex VI; point 2.2.5
EURL-AP, 2017-06 Detection of ruminant DNA in feed using real-time PCR IfF OL

VO (EG) 152/2009
Anhang VI; 2.2.5
EURL-AP, 201x-xx, Draft Detection of pig DNA in feed using real-time PCR
(This document is not release from EURL-AP; current status implementation phase) IfF OL

BAX®
Part D 14368501
2010 BAX® System PCR Assay for Salmonella IfF OL

BIOTECON foodproof®
GMO Screening Kit
06-2010 PCR kit for the qualitative detection of genetically modified plants (35S, NOS, bar and FMV) with the use of real-time PCR instruments IfF OL

ASU L 00.00-105
2014-02 Tests of foodstuffs - Methods of analysis for the detection of genetically modified organisms and derived products - Quantitative nucleic acid based methods (takeover of the standard DIN EN ISO 21570, version August 2013) IfF OL

CRL VL05/06VP
2012-08 Event-specific method for the quantification of Soybean Line MON89788 using real-time PCR IfF OL

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LUFA Nord-West Quantitative determination of genetically modified organisms with the DNA sequence (35S promotor) from cauliflower mosaic virus by real-time PCR IfF OL
 AA 1/3-544
 2010-04

LUFA Nord-West Real-time PCR for the quantitative determination of genetically modified GA 21 maize IfF OL
 AA 1/3-547
 2014-11

LUFA Nord-West Quantitative detection of round-up-ready soybeans IfF OL
 AA 1/3-548
 2013-06

LUFA Nord-West Real-time PCR for the quantitative determination lines with the 35S/pat genetic construct IfF OL
 AA 1/3-549
 2009-10

1.4.4.4 Detection of genetically modified organisms (GMO) and derived products, as well as species detection using multiplex real-time PCR technology in animal feedstuffs, foodstuffs, harvested corps and plants *

ASU G 30.40-14 Detection of CTP2-CP4-EPSPS-, pat and bar-sequences using triplex real-time PCR in plant material - Construct-specific and element specific method IfF OL
 2017-03

ASU L 08.00-61 Tests of foodstuffs - Detection of species beef, swine ,turkey and chicken in charcuterie by multiplex-real-time PCR
 (Modification:*qualitative Determination in Feedstuff*) IfF OL
 2016-03

ASU L 08.00-62 Tests of foodstuffs - Detection of species beef, swine, sheep and equidae in charcuterie by multiplex-real-time PCR
 (Modification:*qualitative Determination in Feedstuff*) IfF OL
 2016-03

BIOTECON foodproof®
 GMO Screening 2 LyoKit PCR-kit for qualitatively detection of of genetically modified plants (bar, P-35S-pat, CTP2-CP4-EPSPS and P-NOS-nptII and P-35S-nptII) IfF OL
 2017-03

1.5 Tests of harmful airborne substances in fields of activity regulated by immission control law

Testing area/ Identification	Group I.1: Determination of emissions Task area G: gaseous inorganic compounds			
Component / Source Type	Standard / Directive / Technical Rule	SRM	QM document	Remarks Site
Title	Designation			
SO ₂ continuous	Stationary source emissions – Determination of mass concentration of sulphur dioxid by Instrumental method	DIN CEN/TS 17021 2017-05	<input checked="" type="checkbox"/>	AA 1/1-948 AA 1/1-904 Site 1
SO ₂	Stationary source emissions – Determination of mass concentration of sulphur dioxid – Standard reference method	DIN EN 14791 2017-05	<input checked="" type="checkbox"/>	AA 1/1-946 AA 4/1B-028 Sampling: Site 1 Analysis: Site 4
NOx continuous	Stationary source emissions – Determination of mass concentration of nitrogen oxides – Standard reference method: chemiluminescence	DIN EN 14792 2017-05	<input checked="" type="checkbox"/>	AA 1/1-948 Site 1
HCl	Stationary source emissions – Determination of mass concentration of gaseous chlorides expressed as HCl – Standard reference method	DIN EN 1911 2010-12	<input checked="" type="checkbox"/>	AA 1/1-947 AA 4/1B-028 Sampling: Site 1 Analysis: Site 4
CO	Stationary source emissions – Determination of the mass concentration of carbon monoxide Standard reference method: Non-dispersive infrared spectrometry	DIN EN 15058 2017-05	<input checked="" type="checkbox"/>	AA 1/1-948 Site 1
NH ₃	Stationary source emissions Measurement of ammonia (and gaseous ammonium compounds) Manual method	VDI 3878 2017-09	<input checked="" type="checkbox"/>	AA 1/1-929 Site 1
CO, NO, NO ₂ , N ₂ O ₂ , SO ₂ , HCl, NH ₃ , CH ₄ continuous	Measure of gases by FTIR- spectrometry	VDI 2460 Blatt 1 1996-07 und DIN EN 15483 2009-02 und KTBL-Schrift 401-11	<input checked="" type="checkbox"/>	AA 1/1-904 Site 1

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Testing area/ Identification	Group I.1: Determination of emissions Task area G: gaseous inorganic compounds				
Component / Source Type	Standard / Directive / Technical Rule		SRM	QM document	Remarks Site
	Title	Designation			
Velocity and Volume flow rate	Stationary source emissions - Manual and automatic determination of velocity and volume flow rate in ducts - Part 1: Manual reference method	DIN EN 16911-1 2013-06	<input checked="" type="checkbox"/>	AA 1/1-958	Site 1
Water vapour	Stationary source emissions – Determination of the water vapour in ducts - Standard reference method	DIN EN 14790 2017-05	<input checked="" type="checkbox"/>	AA 1/1-951	Site 1
O ₂	Stationary source emissions – Determination of volume concentration of oxygen. Standard reference method: Paramagnetism	DIN EN 14789 2017-05	<input checked="" type="checkbox"/>	AA 1/1-948	Site 1

Testing area/ Identification	Group I.1: Determination of emissions Task area G: gaseous organic chemical compounds				
Component / Source Type	Standard / Directive / Technical Rule		SRM	QM document	Remarks Site
	Title	Designation			
Total carbon continuous	Stationary source emissions – Determination of the mass concentration of total gaseous organic carbon – Continuous flame ionisation detector method	DIN EN 12619 2013-04	<input checked="" type="checkbox"/>	AA 1/1-949	Site 1
Benzene	Stationary source emissions – Determination of the mass concentration of single gaseous organic compounds – Carbon adsorption- and solvent desorption	DIN CEN/TS 13649 2015-03	<input checked="" type="checkbox"/>	AA 1/1-950 AA 1/1-960	Site 1
Tetrachlor-ethene	Stationary source emissions – Determination of the mass concentration of single gaseous organic compounds – Carbon adsorption- and solvent desorption	DIN CEN/TS 13649 2015-03	<input checked="" type="checkbox"/>	AA 1/1-950 AA 1/1-960	Site 1

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Testing area/ Identification	Group I.1: Determination of emissions Task area G: gaseous organic chemical compounds				
Component / Source Type	Standard / Directive / Technical Rule		SRM	QM document	Remarks Site
Title	Designation				
PAH	Stationary source emissions – Determination of polycyclic aromatic hydrocarbon (PAH) – GC/MC method	VDI 3874 2006-12	<input checked="" type="checkbox"/>	AA 1/1-953 AA 4/1C-062	Sampling: site 1 Analysis: Site 4
Toluene, Xylene, Ethybenzene, Trichlorethane	Stationary source emissions – Determination of the mass concentration of single gaseous organic compounds – Carbon adsorption- and solvent desorption	DIN CEN/TS 13649 2015-03	<input checked="" type="checkbox"/>	AA 1/1-950 AA 1/1-960	Site 1
Formaldehyde	Measurement of gaseous emissions – Measurement of formaldehyde in exhaust gas of combustion engines - FTIR method	VDI 3862 sheet 8 2015-06	<input checked="" type="checkbox"/>	AA 1/1-904	Site 1
	AHMT method	VDI 3862-4 2001-05	<input checked="" type="checkbox"/>	AA 1/1-955	Site 1

Testing area/ Identification	Group I.1: Determination of emissions Task area P: particulate and of particles adsorbed chemical compounds				
Component / Source Type	Standard / Directive / Technical Rule		SRM	QM document	Remarks Site
Title	Designation				
Dust, filter head unit	Particulate matter measurement – Dust measurement in flowing gases – Gravimetric determination of dust load	VDI 2066 Sheet 1 2006-11	<input checked="" type="checkbox"/>	AA 1/1-922	Site1
Dust, plan filter head unit	Stationary source emissions – Determination of low mass concentration of dust – Part 1: Manual gravimetric method	DIN EN 13284-1 2018-02	<input checked="" type="checkbox"/>	AA 1/1-922	Site 1
PAH	Stationary source emissions – Determination of polycyclic aromatic hydrocarbon (PAH) – GC/MC method	VDI 3874 2006-12	<input checked="" type="checkbox"/>	AA 1/1-953 AA 4/1C-062	Sampling: site 1 Analysis: Site 4 also through HPLC

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Testing area/ Identification	Group I.1: Determination of emissions Task area P: particulate and of particles adsorbed chemical compounds				
Component / Source Type	Standard / Directive / Technical Rule	SRM	QM document	Remarks Site	
Title	Designation				
Arsen (As)	Stationary source emissions – Determination of the total emission of As, Cd, Cr, Co, Cu, Mn, Ni, Pb, Sb, Tl and V	DIN EN 14385 2004-05	<input checked="" type="checkbox"/>	AA 1/1-926 AA4/2A-050	Sampling: site 1 Analysis: Site 4
Cd	Stationary source emissions – Determination of the total emission of As, Cd, Cr, Co, Cu, Mn, Ni, Pb, Sb, Tl and V	DIN EN 14385 2004-05	<input checked="" type="checkbox"/>	AA 1/1-926 AA4/2A-050	Sampling: site 1 Analysis: Site 4
Ni	Stationary source emissions – Determination of the total emission of As, Cd, Cr, Co, Cu, Mn, Ni, Pb, Sb, Tl and V	DIN EN 14385 2004-05	<input checked="" type="checkbox"/>	AA 1/1-926 AA4/2A-050	Sampling: site 1 Analysis: Site 4
Pb	Stationary source emissions – Determination of the total emission of As, Cd, Cr, Co, Cu, Mn, Ni, Pb, Sb, Tl and V	DIN EN 14385 2004-05	<input checked="" type="checkbox"/>	AA 1/1-926 AA4/2A-050	Sampling: site 1 Analysis: Site 4
Quecksilber (Hg)	Air quality - Stationary source emissions - Manual method of determination of the concentration of total mercury	DIN EN 13211 2001-06 and corrigendum 2005-06	<input checked="" type="checkbox"/>	AA 1/1-926 AA4/2A-051	Sampling: site 1 Analysis: Site 4

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Testing area/ Identification	Group I.1: Determination of emissions Task area O: Odours				
Component / Source Type	Standard / Directive / Technical Rule	SRM	QM document	Remarks Site	
Title	Designation				
Odours / perfused area source	Air quality - Determination of odour concentration by dynamic olfactometry Olfactometry - Determination of odour concentration by dynamic olfactometry - Supplementary instructions for application of DIN EN 13725 combined with Olfactometry Static sampling	DIN EN 13725 2003-07 (corrigendum 2006-04) VDI 3884 Part 1 2015-02 VDI 3880 2011-10	<input checked="" type="checkbox"/>	AA 1/1-901 AA 1/1-933 AA 1/1-934	Site 1
Odours / non-perfused area source	Air quality - Determination of odour concentration by dynamic olfactometry Olfactometry - Determination of odour concentration by dynamic olfactometry - Supplementary instructions for application of DIN EN 13725 combined with Olfactometry - Static sampling	DIN EN 13725 2003-07 (corrigendum 2006-04) VDI 3884 Part 1 2015-02 VDI 3880 2011-10	<input checked="" type="checkbox"/>	AA 1/1-901 AA 1/1-933 AA 1/1-935	Site 1

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Testing area/ Identification	Group I.1: Determination of emissions Task area O: Odours				
Component / Source Type	Standard / Directive / Technical Rule	SRM	QM document	Remarks Site	
	Title	Designation			
Odours / industrial point source	Air quality - Determination of odour concentration by dynamic olfactometry Olfactometry - Determination of odour concentration by dynamic olfactometry Supplementary instructions for application of DIN EN 13725 combined with Olfactometry Static sampling	DIN EN 13725 2003-07 (corrigendum 2006-04) VDI 3884 Part 1 2015-02 VDI 3880 2011-10	<input checked="" type="checkbox"/>	AA 1/1-901 AA 1/1-933 AA 1/1-936	Site 1

Testing area/ Identification	Group IV: Determination of immissions Task area O: Odours				
Component / Source Type	Standard / Directive / Technical Rule	SRM	QM document	Remarks Site	
	Title	Designation			
Odours / grid measurements	Measurement of odour impact by field inspection - Measurement of the impact frequency of recognizable odours - Grid measurement	DIN EN 16841-1 2017-03	<input checked="" type="checkbox"/>	AA 1/1-903	Site 1

1.6 List of test methods for the technical module WASTE, Site: Oldenburg, Jägerstrasse 23-27
Version: LAGA of Mai 2018

Testing area 1: Sewage sludge

Not documented

Testing area 2: Soils

Not documented

Testing area 3: Biowaste

Testing area 3.1 to 3.4 not documented

Subareas/ Parameter	Basis/ Procedure	
3.5 Testing of hygienic biowaste*)	Paragraph 3, Section 4 BioAbfV	
- Epidemiological hygiene Salmonella	Annex 2 BioAbfV	<input checked="" type="checkbox"/>
- Phytohygiene Germinable seed material and plants capable of producing shoots	Annex 2 BioAbfV	<input checked="" type="checkbox"/>

*) deviating from Part III No. 1 can proof of competence for the subareas 3.4 und 3.5 be provided for each individual area

Testing area 4: Used oil, insulating fluid

Not documented

Testing area 5: Waste for deposition

Not documented

Testing area 6: Wood waste

Not documented

1.7 Radiological tests of fertilisers, animal feedstuffs, soil, milk and milk products and samples of all types for radiological environmental monitoring

LUFA Nord-West AA 1/3A-033 2018-05	Gamma spectrometric determination of radionuclides (guidelines for measurement of the federal government)	IfF OL
LUFA Nord-West AA 1/3A-056 2018-07	Determination of strontium 89/90 in fertilisers, soil, animal feedstuffs, harvest crops and plants, water and foodstuffs with alpha/beta LowCounter (incl. determination of chemical yield by ICP OES following microwave pressure digestion)	IfF OL

1.8 Determination of livestock water and irrigation water

DIN EN ISO 8467 (H 5) 1995-05	Water quality - Determination of permanganate index (Modification: <i>without sampling</i>)	IfF OL
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DIN EN ISO 10304-1 (D20) 2009-07	Water quality - Determination of dissolved anions by liquid chromatography of ions - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulfate (Modification: <i>without sampling</i>)	IfF OL
DIN EN ISO 10523 (C5) 2012-04	Water quality - Determination of pH (Modification: <i>without sampling</i>)	IfF OL
DIN EN ISO 11885 (E 22) 2009-09	Water quality - Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP OES) (Modification: <i>divergent sample preparation for coloured sample and sample with particle</i>)	IfF OL

2 Tests at Site 2, Institut für Tiergesundheit (IfT OL);

Veterinary medicine: Tests of sample materials of animal origin and hygienic status controls for diagnostic purposes and selected Foodstuff

2.1. Microbiology (including bacteriology, mycology, infectious serology and molecular biology)

2.1.1 Culture tests in Milk, feces incl. faecal swabs, tissue samples incl. punctates, swabs and lavage fluids Microbiology (including bacteriology, mycology, infectious serology and molecular biology) of bacteria including biochemical differentiation **

Analyte (measurand)	Test sample (matrix)	Testing Technology
bacteria	veterinary samples	cultural proof
bacteria	milk samples	cultural proof
fungus	milk samples	cultural proof
bacteria (anaerob)	veterinary samples	cultural proof
Rhinitis atrophicans	swab (swine)	cultural proof
Taylorella equigentalis (CEM)	veterinary samples (horse)	cultural proof
Actinobaculum suis	veterinary samples (swine)	cultural proof
Haemophilus parasuis	veterinary samples (swine)	cultural proof
Actinobacillus pleuropneumoniae	veterinary samples (swine)	cultural proof
Testing of resistance	isolates	microdilution (MIC)
bacteria	faeces	cultural proof
bacteria	isolates	germ differentiation
bacteria	isolates	Gram's stain

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Analyte (measurand)	Test sample (matrix)	Testing Technology
Staphylococcus hyicus	isolates	germ differentiation
Mycobacterium avium ssp. paratuberculosis	faeces	cultural proof
salmonella	isolates	germ differentiation

2.1.2 Culture tests in hygienic status controls including biochemical differentiation **

Analyte (measurand)	Test sample (matrix)	Testing Technology
bacteria	swab of milking machine	germ differentiation
bacteria	isolates	germ differentiation
bacteria	isolates	Gram's stain
salmonella	isolates	germ differentiation

2.1.3 Agglutination tests for proteins in blood *

Analyte (measurand)	Test sample (matrix)	Testing Technology
Brucellosis antibody	blood serum/-plasma (cattle, swine, sheep, goat)	Rose-bengal-test
Brucellosis antibodyr	blood serum/-plasma (cattle, swine, sheep, goat)	Serum slow agglutination

2.1.4 Complement fixation reaction tests for proteins in blood *

Analyte (measurand)	Test sample (matrix)	Testing Technology
Brucella abortus-antibody	serum (cattle, swine, sheep, goat)	Complement binding reaction

2.1.5 ELISA (ligand assay) for the detection of proteins in blood, meat juice and milk *

Analyte (measurand)	Test sample (matrix)	Testing Technology
salmonellae-antibody	blood serum/-plasma (swine)	enzyme immunoassay
salmonellae-antibody	Meat juice samples (swine)	enzyme immunoassay
Paratuberkulose-antibody	blood serum/-plasma (cattle ,sheep, goat)	enzyme immunoassay
Paratuberkulose-antibody	milk samples (cattle)	enzyme immunoassay

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Analyte (measurand)	Test sample (matrix)	Testing Technology
Actinobacillus pleuropneumoniae antibody Type 1-12	blood serum/-plasma (swine)	enzyme immunoassay
Actinobacillus pleuropneumoniae antibody Type 5	blood serum/-plasma (swine)	enzyme immunoassay
Actinobacillus pleuropneumoniae antibody Type 2	blood serum/-plasma (swine)	enzyme immunoassay
Actinobacillus pleuropneumoniae antibody Type 1-9-11	blood serum/-plasma (swine)	enzyme immunoassay
Actinobacillus pleuropneumoniae antibody Type 4-7	blood serum/-plasma (swine)	enzyme immunoassay
Actinobacillus pleuropneumoniae antibody Type 10	blood serum/-plasma (swine)	enzyme immunoassay
Actinobacillus pleuropneumoniae antibody Type 3-6-8	blood serum/-plasma (swine)	enzyme immunoassay
Actinobacillus pleuropneumoniae antibody Type 12	blood serum/-plasma (swine)	enzyme immunoassay
Mycoplasma hyopneumoniae antibody	blood serum/-plasma (swine)	enzyme immunoassay
Brucella abortus antibody	Single milk (cattle)	enzyme immunoassay
Brucella abortus antibody	collecting milk (cattle)	enzyme immunoassay
Brucella spp. antibody	blood serum/-plasma (cattle, sheep, goat, swine)	enzyme immunoassay
Brucella abortus antibody	Pooled bloodsamples (cattle)	enzyme immunoassay
Q-Fieber antibody	blood serum/-plasma (cattle, sheep, goat)	enzyme immunoassay
Q-Fieber antibody	Milk samples (cattle, sheep, goat)	enzyme immunoassay
Q-Fieber antibody	collecting milk (cattle, sheep, goat)	enzyme immunoassay
Chlamydophila abortus antibody	blood serum (cattle, sheep, goat)	enzyme immunoassay

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2.1.6 Microagglutination test for the detection of proteins in the blood **

Analyte (measurand)	Test sample (matrix)	Testing Technology
Leptospira canicola	blood serum (cattle)	microagglutination
Leptospira grippotyphosa	blood serum (cattle)	microagglutination
Leptospira hardjo	blood serum (cattle)	microagglutination
Leptospira icterohaemorrhagiae	blood serum (cattle)	microagglutination
Leptospira pomona	blood serum (cattle)	microagglutination

2.1.7 Amplification methods for the detection of nucleic acid in faecal samples

2.1.7.1 Realtime PCR **

Analyte (measurand)	Test sample (matrix)	Testing Technology
Chlamydiaceae	faeces (all affected animal species)	Realtime-PCR
Mycobacterium avium subspezies paratuberculosis	faeces (cattle)	Realtime-PCR
Mycobacterium avium subspezies paratuberculosis	faeces (ruminants)	Realtime-PCR
Brachyspira hyodysenteriae	faeces/intestine (swine)	Realtime-PCR
Brachyspira pilosicoli	faeces/intestine (swine)	Realtime-PCR
Lawsonia intracellularis	faeces/intestine (swine)	Realtime-PCR

2.1.7.2 PCR **

Analyte (measurand)	Test sample (matrix)	Testing Technology
Brachyspira hyodysenteriae	faeces/Intestine (swine)	PCR
Brachyspira pilosicoli	faeces/Intestine (swine)	PCR
Lawsonia intracellularis	faeces/Intestine (swine)	PCR

2.1.8 Amplification methods for the detection of nucleic acid in tissue samples including punctates, body- and irrigation fluids and cultures

2.1.8.1 Realtime PCR **

Analyte (measurand)	Test sample (matrix)	Testing Technology
Chlamydiaceae	veterinary samples (all affected animal species)	Realtime-PCR
Mycoplasma bovis	veterinary samples (cattle)	Realtime-PCR
Coxiella burnetii	veterinary samples (cattle, sheep, goat)	Realtime-PCR
Taylorella equigenitalis	veterinary samples (horse)	Realtime-PCR
Mycobacterium avium subspezies paratuberculosis	veterinary samples (ruminants)	Realtime-PCR

2.1.8.2 PCR **

Analyte (measurand)	Test sample (matrix)	Testing Technology
Clostridium perfringens Typisation	veterinary samples (all affected animal species)	PCR
Histophilus somni	veterinary samples (cattle)	PCR
Actinobacillus pleuropneumoniae	veterinary samples (swine)	PCR
toxinogenic Pasteurella	veterinary samples (swine)	PCR
pathogenic leptospira	veterinary samples (all affected animal species)	PCR
Haemophilus parasuis	veterinary samples (swine)	PCR
Mycoplasma hyopneumoniae	veterinary samples (swine)	PCR
Mycoplasma hyorhinis	veterinary samples (swine)	PCR
pathogenic E.coli	veterinary samples (swine)	PCR

2.1.9 Foodstuffs

2.1.9.1 Amplification methods for the detection of nucleic acid in milk and milkproducts, eggs und eggproducts, meat and meatproducts *

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Analyte (measurand)	Test sample (matrix)	Testing Technology
Salmonella	milk and milkproducts	Realtime-PCR
Salmonella	meat and sausage products	Realtime-PCR
Salmonella	egg and egg products	Realtime-PCR
Salmonella	chocolate, cocoa and cocoa products, coffee, tea	Realtime-PCR
Salmonella	foodstuff	Realtime-PCR

2.2 Virology (incl. Infectious serology, molecular biology)

2.2.1 ELISA (ligand assay) for the detection of proteins in blood, milk and tissue samples *

Analyte (measurand)	Test sample (matrix)	Testing Technology
PRRS antibody+A132+A1+A141:B164	blood serum/-plasma (swine)	enzyme immunoassay
PCV-2 IgG antibody	blood serum/-plasma (swine)	enzyme immunoassay
PCV-2 IgM antibody	blood serum/-plasma (swine)	enzyme immunoassay
CAE antibody	blood serum/-plasma (goat)	enzyme immunoassay
Maedi/Visna antibody	blood serum/-plasma (sheep)	enzyme immunoassay
CAE antibody	blood serum/-plasma (goat)	enzyme immunoassay
Maedi/Visna antibody	blood serum/-plasma (sheep)	enzyme immunoassay
BHV1-gB antibody	blood serum/-plasma (cattle)	enzyme immunoassay
BHV1-gB antibody	milk samples (cattle)	enzyme immunoassay
BHV1-gE antibody	blood serum/-plasma (cattle)	enzyme immunoassay
BHV1-Antibody	milk samples (cattle)	enzyme immunoassay
BHV1 antibody	collecting milk samples (cattle)	enzyme immunoassay
BVDV antigen	blood serum/-plasma (cattle)	enzyme immunoassay
BVDV antigen	ear tissue punching sample	enzyme immunoassay
BVDV antibody	blood serum/-plasma (cattle)	enzyme immunoassay
BVDV antibody	milk samples (cattle)	enzyme immunoassay
BVDV antibody	collecting milk samples (cattle)	enzyme immunoassay
Aujeszky gB antibody	blood serum/-plasma (swine)	enzyme immunoassay
CSFV antibody	blood serum/-plasma (swine)	enzyme immunoassay
BTV antibody	blood serum/-plasma	enzyme immunoassay

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Analyte (measurand)	Test sample (matrix)	Testing Technology
	(cattle, goat, sheep, goat, bison)	
Schmallenbergvirus antibody	blood serum/-plasma (cattle, sheep, goat)	enzyme immunoassay
Leukosis antibody	milk samples (cattle)	enzyme immunoassay
Leukosis antibody	collecting milk samples (cattle)	enzyme immunoassay
Leukosis antibody	blood serum/-plasma (cattle, buffalo)	enzyme immunoassay
Leukosis antibody	Pool samole blood (cattle, buffalo)	enzyme immunoassay
InfluenzaA antibody	blood serum/-plasma (swine, poultry)	enzyme immunoassay

2.2.2 ELISA (ligand assay) for the detection of proteins in faecal samples *

Analyte (measurand)	Test sample (matrix)	Testing Technology
Corona virus antigen	faeces (cattle)	enzyme immunoassay
Rota virus antigen	faeces (cattle, swine)	enzyme immunoassay

2.2.3 Amplification methods for the detection of nucleic acid in blood

2.2.3.1 Realtime PCR **

Analyte (measurand)	Test sample (matrix)	Testing Technology
Bovine virus diarrhea virus	blood serum/-plasma (cattle)	Realtime-PCR
Bluetongue virus	EDTA-Blut (cattle, sheep, goat)	Realtime-PCR
Bluetongue virus-typing	EDTA-Blut (cattle, sheep, goat)	Realtime-PCR
Porcines Reproductive and respiratory syndrome virus NA-Type	blood serum/-plasma (swine)	Realtime-PCR
Porcines Reproductive and respiratory syndrome virus EU-Type	blood serum/-plasma (swine)	Realtime-PCR
Porcines Reproductive and respiratory syndrome virus HP-Type	blood serum/-plasma (swine)	Realtime-PCR
Schmallenberg virus	blood serum/-plasma (cattle, sheep, goat)	Realtime-PCR
Porcine circovirus type 2	blood serum/-plasma (swine)	Realtime-PCR
Classic swine fever virus	blood serum/-plasma (swine)	Realtime-PCR

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Analyte (measurand)	Test sample (matrix)	Testing Technology
African swine fever virus	blood serum/-plasma (swine)	Realtime-PCR
Bovine virus diarrhea virus type 2	blood serum/-plasma (cattle)	Realtime-PCR
Capripox virus	blood serum/-plasma (cattle, buffalo, sheep, goat)	Realtime-PCR

2.2.3.2 PCR **

Analyte (measurand)	Test sample (matrix)	Testing Technology
Porcine Parvovirus	blood serum/-plasma (swine)	PCR
Porcine Parvovirus typ 2	blood serum/-plasma (swine)	PCR
Porcine cytomegalovirus	blood serum/-plasma (swine)	PCR
Porcines Reproductive and respiratory syndrome virus NA type	blood serum/-plasma (swine)	PCR
Porcines Reproductive and respiratory syndrome virus EU type	blood serum/-plasma (swine)	PCR

2.2.4 Amplification methods for the detection of nucleic acid in tissue samples, faecal samples, body- and lavage fluids and cultures

2.2.4.1 Realtime PCR **

Analyte (measurand)	Test sample (matrix)	Testing Technology
Bovine virus diarrhea virus	veterinary samples (cattle)	real-time-PCR
Classic swine fever virus	veterinary samples (swine)	real-time-PCR
SHV1 virus (Aujeszky's disease virus)	veterinary samples (swine)	real-time-PCR
Bluetongue virus	veterinary samples (cattle, sheep, goat)	real-time-PCR
Bluetongue virus typing	veterinary samples	real-time-PCR
Porcines Reproductive and respiratory syndrome virus NA type	veterinary samples	real-time-PCR
Porcines Reproductive and	veterinary samples	real-time-PCR

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Analyte (measurand)	Test sample (matrix)	Testing Technology
respiratory syndrome virus EU type		
Porcines Reproductive and respiratory syndrome virus HP type	veterinary samples	real-time-PCR
Schmallenberg virus	veterinary samples	real-time-PCR
Porcine circovirus type 2	veterinary samples	real-time-PCR
Influenza A virus	veterinary samples	real-time-PCR
Influenza C/D virus	veterinary samples	real-time-PCR
Bovine herpes virus 1	veterinary samples	real-time-PCR
African swine fever virus	veterinary samples	real-time-PCR
Bovine virus diarrhea virus type 2	veterinary samples	real-time-PCR
bovine parainfluenza 3 virus	veterinary samples	real-time-PCR
bovine respiratory syncytial virus	veterinary samples	real-time-PCR
Capripox-virus	veterinary samples	real-time-PCR
Porcines epizootic diarrhea virus	faeces (swine)	real-time-PCR
Transmissible gastroenteritis virus	faeces (swine)	real-time-PCR

2.2.4.2 PCR **

Analyte (measurand)	Test sample (matrix)	Testing Technology
Porcine's Parvovirus	veterinary samples	PCR
Porcine circovirus type 2	veterinary samples	PCR
Porcine cytomegalovirus	veterinary samples	PCR
Influenza A virus	veterinary samples	PCR
Porcines Reproductive and respiratory syndrome virus NA type	veterinary samples	PCR
Porcines Reproductive and respiratory syndrome virus EU type	veterinary samples	PCR

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Analyte (measurand)	Test sample (matrix)	Testing Technology
Porcines respiratory coronavirus	veterinary samples	PCR

2.2.5 Precipitation method for the detection of proteins in blood *

Analyte (measurand)	Test sample (matrix)	Testing Technology
Leukosis-Antibody	blood serum/-plasma (cattle)	AGIDT

2.3 Parasitology

2.3.1 ELISA (ligand assay) for the detection of proteins in blood and milk*

Analyte (measurand)	Test sample (matrix)	Testing Technology
Sarcoptes antibody	blood serum/-plasma (swine)	enzyme immunoassay
Fasciola hepatica antibody	blood serum/-plasma (cattle, sheep)	enzyme immunoassay
Fasciola hepatica antibody	pool sample blood (cattle, sheep)	enzyme immunoassay
Fasciola hepatica antibody	collecting milk (cattle)	enzyme immunoassay
Neospora caninum antibody	blood serum/-plasma (cattle)	enzyme immunoassay
Neospora caninum antibody	milk samples (cattle)	enzyme immunoassay
Ostertagia ostertagi antibody	collecting milk (cattle)	enzyme immunoassay

2.3.2 Microscopic methods for the detection of parasites in faecal samples **

Analyte (measurand)	Test sample (matrix)	Testing Technology
parasite eggs	faeces	Sedimentation-/ flotation
Lung worm larvae	faeces	Migration technique
Strongyles	faeces	Migration technique
coccidia oocysts	faeces	microscopy
Cryptosporidium	faeces	microscopy

2.3.3 Microscopic detection of parasites in tissue **

Analyte (measurand)	Test sample (matrix)	Testing Technology
ectoparasites	skin scrapings	microscopy

2.3.4 Amplification methods for the detection of nucleic acid in tissue samples

2.3.4.1 Real-time-PCR**

Analyte (measurand)	Test sample (matrix)	Testing Technology
Neospora caninum	veterinary samples (cattle)	real-time-PCR

2.4 Immunology

2.4.1 ELISA (ligand assay) for the detection of proteins in blood and milk *

Analyte (measurand)	Test sample (matrix)	Testing Technology
pregnancy-associated glycoproteins	blood serum/-plasma (cattle)	Enzyme immunoassay
pregnancy-associated glycoproteins	serum (sheep, goat)	Enzyme immunoassay
pregnancy-associated glycoproteins	EDTA-plasma (buffalo)	Enzyme immunoassay
pregnancy-associated glycoproteins	milk samples (cattle, goat, sheep, water buffalo)	Enzyme immunoassay

2.5 selected foodstuffs

2.5.1 Amplification methods for the detection of nucleic acid in milk and milkproducts, eggs and eggproducts, meat and meat products *

Analyte (measurand)	Test sample (matrix)	Testing Technology
Salmonella	milk and milkproducts	real-time-PCR
Salmonella	meat and sausage products	real-time-PCR
Salmonella	egg and egg products	real-time-PCR
Salmonella	chocolate, cocoa and cocoa products, coffee, tea	real-time-PCR
Salmonella	feedstuffs	real-time-PCR

3 Tests at Site 3 – Institut für Lebensmittelqualität (IfL OL)

3.1 Sensory tests of milk, milk products and selected foodstuffs

DIN ISO 22935-3 2012-12	Milk and milk products – Sensory analysis – Part 3: Guidance on a method for evaluation of compliance with product specifications for sensory properties by scoring	IfL OL
ASU L 04.00-9 1986-05	Analysis of food products; determination of the distribution of water in butter; indicator-paper method (takeover of the German standard DIN 10311 with the same title, version August 1985)	IfL OL
LUFA Nord-West AA 3/5S-101 2018-05	Sensory tests	IfL OL

3.2 Chemical, physico-chemical and physical tests of foodstuffs

3.2.1 Gravimetric determination of constituents and additives in foodstuffs *

ASU L 00.00-24/1 2013-01	Analysis of food products - Determination of moisture, non-fat solids and fat contents of butter – Part 1: Determination of moisture content (Reference method) (takeover of the standard DIN EN ISO 3727 – Part 1 with the same title, version April 2002)	IfL OL
ASU L 00.00-24/2 2013-01	Analysis of food products – Determination of moisture, non-fat solids and fat contents of butter – Part 2: Determination of non- fat solids content (Reference method) (takeover of the standard DIN EN ISO 3727 – Part 2 with the same title, version April 2002)	IfL OL
ASU L 00.00-24/3 2013-01	Analysis of food products – Determination of moisture, non-fat solids and fat contents of butter – Part 3: Calculation of fat content (takeover of the standard DIN EN ISO 3727 – Part 3 with the same title, version April 2002) (Modification: <i>The water and FFT results of routine procedures ASU L 04.00-8 and ASU L 04.00-16 are routinely taken as the basis for calculation</i>)	IfL OL
ASU L 01.00-9 2012-01	Analysis of food products – Determination of fat content of milk; – Gravimetric method (Reference method) (takeover of the standard DIN EN ISO 1211 with the same title, version November 2010) (Modification: <i>here also whole milk powder, skim milk powder, whey powder, butter milk powder, condensed milk, sugared condensed milk, cream, whey and buttermilk</i>)	IfL OL

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ASU L 01.00-20 2013-08	Analysis of food products - Determination of fat content of milk and milk products; method according to Weibull-Berntrop (takeover of the German standard DIN 10342 with the same title, version September 1992) <i>(Modification: automated procedure with hydrotherm and soxtherm, use of petroleum benzene)</i>	IfL OL
ASU L 01.00-27 1988-12	Analysis of food products - Determination of the dry matter content of milk and cream; reference method (takeover of the German standard DIN 10348, version October 1988)	IfL OL
ASU L 02.06-E (EC) and 1 (EC) to 4 (EC) 1981-01	Analytical methods for the determination of the composition of certain dried or partially dried non-perishable milk products <ul style="list-style-type: none"> - Method 1: Determination of dry measure (drying closet 99°C) - Method 2: Determination of water content (drying closet 102°C) - Methods 3: determination of fat content (Röse-Gottlieb method) - Methods 4: determination of fat content (Röse-Gottlieb method) 	IfL OL
ASU L 02.09-2 1986-05	Analysis of food products; Determination of "fixed ash" of caseins; reference method (takeover of the German standard DIN 10451 with the same title, version March 1983)	IfL OL
ASU L 03.00-8 2007-04	Analysis of food products - Determination of fat content of cheese and processed cheese – gravimetric method according to Schmid-Bondzynski-Ratzlaff (reference method) (takeover of the standard DIN EN ISO 1735 with the same title, version May 2005) <i>(Modification: here also caseins and caseinates)</i>	IfL OL
ASU L 03.00-9 2007-04	Analysis of food products - Determination of the total dry matter content of cheese and processed cheese - reference method (takeover of the standard DIN EN ISO 5534, version September 2004)	IfL OL
ASU L 03.00-26 1997-01	Analysis of food products - Determination of fat content in dry substance from cheese and processed cheese	IfL OL
ASU L 04.00-8 1992-06	Analysis of food products; Determination of the water content of butter (takeover of the German standard DIN 10317, version August 1991) <i>(withdrawn norm)</i>	IfL OL

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ASU L 04.00-16 1990-12	Analysis of food products; Determination of non-fat solids content of butter; routine method (takeover of the German standard DIN 10463 with the same title, version November 1990)	IfL OL
ASU L 06.00-3 2014-08	Analysis of food products - Determination of water content in meat and meat products, Gravimetric method, Reference method	IfL OL
ASU L 06.00-4 2017-10	Analysis of food products - Determination of ash in meat, meat products and sausages – Gravimetric method (reference method)	IfL OL
ASU L 06.00-6 2014-08	Analysis of food products - Determination of total fat content in meat and meat products, Gravimetric method according to Weibull-Stoldt – reference method <i>(Modification: automated procedure with hydrotherm and soxtherm)</i>	IfL OL
IDF 9C 1987-11	Determination of fat content of dried milk products	IfL OL
IDF 78C 1991	Determination of water content of caseins and caseinates by the gravimetric reference method	IfL OL
IOCCC sheet 14 1972	Determination of total fat in cocoa products <i>(Modification: automated procedure with hydrotherm)</i>	IfL OL
IOCCC sheet 16 1973	Determination of ash in cocoa and chocolate products	IfL OL
IOCCC sheet 25 1988	Determination of water-insoluble, water-soluble, and acid-insoluble Ash in Cocoa and Chocolate Products	IfL OL
VDLUFA VI, C 10.2 2000	Determination of total ash	IfL OL
VDLUFA VI, C 15.2.4 1995	Determination of free fat in dried fatty milk products	IfL OL
VDLUFA VI, C 35.3 1985-01	Determination of dry measure: sea sand method	IfL OL
VDLUFA VI, C 35.6 1985-01	Determination of water content in dried milk products	IfL OL

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LUFA Nord-West AA 3/5C-005 2016-07	Determination of filling weight/filling volume/volume/ drained net weight/air impacting	IfL OL
LUFA Nord-West AA 3/5C-118 2017-09	Determination of free fat in milk and cream	IfL OL
LUFA Nord-West AA 3/5C-135 2017-03	Gravimetric determination of coatings and their enclosed food	IfL OL
LUFA Nord-West AA 3/5C-136 2017-07	Determination of dry measure/water in foodstuffs	IfL OL

3.2.2 Titrimetric determination of constituents and additives in foodstuffs *

ASU L 01.00-7 2002-05	Analysis of food products – Determination of acid degree of milk and liquid milk products (takeover of the German standard DIN 10316 with the same title, version August 2000)	IfL OL
ASU L 01.00-10/1 2016-03	Analysis of food products - Determination of nitrogen content of milk and milk products – Part 1: Kjeldahl method and calculation of the raw protein content (takeover of the German standard DIN EN ISO 8968-1 with the same title, version June 2014)	IfL OL
ASU L 01.00-10/5 2002-12	Analysis of food products - Determination of nitrogen content of milk – Part 5: Determination of the protein-nitrogen content (takeover of the German standard DIN EN ISO 8968-5 with the same title, version June 2002)	IfL OL
ASU L 04.00-10 1981-04	Determination of the salt content of butter (takeover of the German standard DIN 10323 with the same title, version May 1971) <i>(withdrawn norm)</i>	IfL OL
ASU L 06.00-7 2014-08	Analysis of food products - Determination of raw protein content in meat and meat products - Titrimetric method according to Kjeldahl; reference method	IfL OL
ASU L 13.00-5 2012-01	Analysis of food products - Determination of acid value and acidity in animal and vegetable fats and oils (takeover of the standard DIN EN ISO 660 with the same title, version October 2009)	IfL OL

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ASU L 13.00-6 1991-06	Analysis of food products; Determination of peroxide value in fats and oils; Method according to Wheeler; Method according to Sully (takeover of method C-VI 6a (84) with the same title of the German standard methods for the test of fats, fat products and related substances) <i>(withdrawn norm)</i>	IfL OL
DGF C-V 3 2002-05	Saponification number	IfL OL
DGF C-V 11d 2014	Iodine number according to Wijs <i>(Modification: chloroform in place of cyclohexane)</i>	IfL OL
IOCCC, sheet 26 1988	Determination of moisture (Karl Fischer method)	IfL OL
VDLUFA VI C 10.6.2 1988	Determination of chloride content in cheese: Method according to Erbacher	IfL OL
VDLUFA VI C 10.6.3 2003	Determination of chloride content in cheese: potentiometric method <i>(also other foodstuffs)</i>	IfL OL
VDLUFA VI C 30.3 1985-01	Determination of NPN (non-protein nitrogen) content	IfL OL
ADPI Bull. 916, p. 35 1990	Determination of titratable acid (ADPI method)	IfL OL
AOAC 970.22 1970	Nitrogen (total) in cocoa products	IfL OL
IDF 6B 1989	Determination of acidity of butter fat (IDF method) <i>(withdrawn norm)</i>	IfL OL

3.2.3 Photometric determination of secondary constituents and additives in foodstuffs *

ASU L 01.00-36 1990-06	Analysis of food products; Determination of nitrate content in milk and milk products; Xylenol method <i>(also meat and meat products)</i>	IfL OL
ASU L 01.00-41 1991-12	Analysis of food products; Determination of phosphatide value in milk, milk products and cheese	IfL OL

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ASU L 01.00-79 2006-12	Analysis of food products - Determination of nitrate and nitrite contents of milk - Part 2: Method using segmented flow analysis; Routine method (takeover of the standard DIN EN ISO 14673-2 with the same title, version May 2004);	IfL OL
ASU L 06.00-8 2017-10	Analysis of food products - Determination of hydroxyproline content in meat, meat products and sausages – Photometric method following acid digestion (reference method)	IfL OL
ASU L 07.00-60 2007-04	Analysis of food products – Determination of nitrate and/or nitrite content in meat products after enzymatic reduction-Part 3: Spectrometric determination of nitrate and nitrite content of meat products after enzymatic of nitrate to nitrite (takeover of the standard DIN EN 12014-3 with the same title, version August 2005) <i>(Restriction: only determination of nitrite)</i> <i>(Modification: also in milk and milk products)</i>	IfL OL
DGF C-VI, 6e 2006	Anisidine value	IfL
IOCCC sheet 28 1988	Determination of purines in cocoa and cocoa products	IfL OL
LUFA Nord-West AA 3/5C-307 2018-01	Determination of the whey protein nitrogen index (WPNI), photometric method	IfL OL
LUFA Nord-West AA 3/5C-308 2017-05	Determination of diacetyl content in butter, photometric method	IfL OL

3.2.4 Determination of primary and secondary constituents in foodstuffs by enzymatic methods *

DIN 10484 2013-09	Milk - Determination of urea and ammonia - photometric method	IfL OL
ASU L 01.00-17 2016-10	Analysis of food products - Determination of lactose and galactose content of milk and milk products - enzymatic method (takeover of the German standard DIN 10344 with the same title, version Mai 2015)	IfL OL
ASU L 01.00-26/1 2011-01	Analysis of food products - Determination of L- and D-lactic acid (L- and D-lactate) content of milk and milk products – Enzymatic method (takeover of the German standard DIN 10335 with the same title, version September 2010)	IfL OL

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ASU L 01.00-31 1988-12	Analysis of food products; Determination of lactulose content of milk	IfL OL
ASU L 01.00-86 2012-01	Analysis of food products - Determination of the citric acid content of milk and milk products – Enzymatic method <i>(takeover of the German standard DIN 10325 with the same title, version July 2010)</i>	IfL OL
ASU L 01.00-90 2014-02	Analysis of food products - Determination of lactose content of lactose-reduces milk and milk products in the present of glucose - enzymatic method	IfL OL
ASU L 02.00-12 2009-06	Analysis of food products - Determination of sucrose and glucose content of milk products and ice cream – Enzymatic method (takeover of the standard DIN 10326 with the same title, version December 2007)	IfL OL
ASU L 03.00-39 2010-09	Analysis of food products - Determination of starch in grated cheese – Enzymatic method <i>(Modification: also other foodstuffs)</i>	IfL OL
ASU L 05.00-2 correction 2002-12	Analysis of food products - Determination of L lactic acid, succinic acid and D-3-hydroxybutyric acid in eggs and egg products – Enzymatic method; correction	IfL OL
ASU L 05.00-10 2003-12	Analysis of food products - Determination of glucose, fructose and sucrose in eggs and egg products – Enzymatic method	IfL OL
ASU L 07.00-14 2017-10	Analysis of food products - Determination of acetic acid (acetate) in meat products – Enzymatic method <i>(Modification: also other foodstuffs)</i>	IfL OL
VDLUFA VI, C 8.6 1985-01	Enzymatic determination of L and D lactic acid content (L and D lactate) of milk and milk products	IfL OL
VDLUFA VI, C 8.7 2000	Enzymatic determination of citric acid content of cheese and processed cheese	IfL OL
VDLUFA VI, C 20.2.3 1985-01	Enzymatic determination of lactose and galactose content of milk and milk products	IfL OL
VDLUFA VI, C 20.3 1988	Enzymatic determination of sucrose and glucose content of milk products	IfL OL

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r-biopharm Art. No 10 176 290 035 2013-03	UV-test for the determination of ethanol in foodstuffs and other materials	IfL OL
r-biopharm Art. No 10 542 946 035 2011-07	UV-test for the determination of urea and ammonia in foodstuffs and other materials	IfL OL

3.2.5 Potentiometric determination of pH in foodstuffs

ASU L 04.00-13 2006-12	Analysis of food products - Determination of pH value of butter plasma (takeover of the German standard DIN 10349 with the same title, version October 2004)	IfL OL
ASU L 06.00-2 1980-09	Determination of pH value of meat and meat products	IfL OL
VDLUFA VI, C 8.2 1985-01	Determination of pH value of milk and milk products <i>(Modification: also in other foodstuffs)</i>	IfL OL

3.2.6 Cryometric tests of milk and cream

DIN EN ISO 5764 2009-10	Milk - Determination of freezing point - Thermistor cryoscope method (Reference method)	IfL OL
ASU L 01.00-29 1988-12	Analysis of food products; Determination of the freezing point of milk; thermistor-cryometric-method	IfL OL

3.2.7 Polarographic tests of milk and milk products

ASU L 01.00-40 2000-07	Analysis of food products - Determination of whey protein fraction in total protein of milk, milk products and cheese - polarographic method	IfL OL
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3.2.8 Butyrometric tests of milk and milk products

ASU L 01.00-74/1 2002-12	Analysis of food products - Butyrometric determinations of the fat content of milk and milk products – Part 1: General guidance on the use of butyrometric methods and technical specification for amyl alcohol (takeover of the German standard DIN 10479-1, version June 2000)	IfL OL
ASU L 01.00-74/2 2002-12	Analysis of food products - Butyrometric determination of fat content of milk and milk products – Part 2: Requirements specific to products (takeover of the German standard DIN 10479-2 with the same title, version November 2001)	IfL OL

3.2.9 Selected physico-chemical tests of foodstuffs

ASU L 01.00-28 1988-12	Analysis of food products; Hydrometric determination of density of milk (takeover of the standard DIN 10459 with the same title, version October 1988)	IfL OL
ASU L 04.00-14 1996-02	Analysis of food products - Determination of the hardness of butter (takeover of the German standard DIN 10331 with the same title, version March 1996)	IfL OL
VDLUFA VI, C 12.3 2003	Determination of density with the hydrometer (spindle)	IfL OL
VDLUFA VI, C 26.4 1995	Determination of bulk density	IfL OL
VDLUFA VI, C 26.5 1995	Determination of bulkhead value and tamped density	IfL OL
ADPI Bull. 916, p. 30 1990	Determination of solubility of powdered milk	IfL OL
ADPI Bull. 916, p. 32 1990	Degree of purity of powdered milk	IfL OL
IMV 87 1979	Determination of dispersibility	IfL OL
IMV 87 1979	Determination of wettability	IfL OL
IMV 107 1982	Determination of burnt particle content of casein and caseinate	IfL OL

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LUFA Nord-West Determination of lipase IfL OL
 AA 3/5C-314
 2018-01

LUFA Nord-West Alcohol sample for the determination of milk freshness IfL OL
 AA 3/5C-802
 2008-11

3.2.10 Determination of constituents, additives and organic contaminants in foodstuffs by HPLC with standard detectors

ASU L 01.00-76 2009-06	Analysis of food products - Determination of aflatoxin M1 content of milk and powdered milk – Clean-up by immunoaffinity chromatography and determination by high-performance liquid chromatography (takeover of the German standard DIN EN ISO 1450 with the same title, version January 2008)	IfL OL
ASU L 45.00-1 1999-11	Analysis of food products - Determination of theobromine and caffeine content of cocoa <i>(Restriction: only theobromine)</i>	IfL OL
VDLUFA VI, C, 30.6.1 3rd supplement 1995	Determination of rennet whey content of powdered milk according to glycomacropeptide A concentration by high-performance liquid chromatography (HPLC)	IfL OL
IDF 178A 1999	Determination of acid-soluble β lactoglobulin content of heat-treated milk	IfL OL
LUFA Nord-West AA 3/5C-511 2017-04	Determination of benzoic acid and sorbic acid in low-fat and fatty foodstuffs by HPLC	IfL OL
LUFA Nord-West AA 3/5C-513 2017-08	Determination of the sugar spectrum (sucrose, glucose, fructose, maltose, lactose) in foodstuffs (HPLC)	IfL OL
LUFA Nord-West AA 3/5C-514 2017-04	Determination of caffeine content by HPLC	IfL OL
LUFA Nord-West AA 3/5C-517 2017-02	Determination of natamycin in natamycin products, cheese and cheese rind (HPLC method)	IfL OL

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3.2.11 Determination of constituents and organic contaminants in foodstuffs by gas chromatography (GC) with standard detectors

ASU L 00.00-38/1-4 1998-09	Analysis of food products - Fatty food – Determination of pesticides and poly-chlorinated biphenyls (PCB) – Part 1-4 (takeover of the German standard DIN EN 1528-1 to with the same title, version January 1997) <i>(Modification: extraction of fat: also fat recovery with BDI solution)</i> <i>(Restriction: only chlorinated pesticides)</i>	IfL OL
LUFA Nord-West AA 3/5C-403 2016-04	Determination of fatty acid profile by GC	IfL OL
LUFA Nord-West AA 3/5C-404 2017-01	Determination of cholesterol in milk and milk products	IfL OL
FA Nord-West AA 3/5C-405 2017-01	Determination of milk fat fraction by calculation on the basis of butyric acid (GC)	IfL OL
LUFA Nord-West AA 3/5C-406 2017-01	Determination of volatile halogenated hydrocarbons in foodstuffs	IfL OL

3.2.12 Determination of constituents in foodstuffs by ion chromatography (IC) with amperometric detection

LUFA Nord-West AA 3/5C-518 2018-05	Determination of sucrose, glucose, galactose, fructose, maltose and lactose in milk, milk products, soft drinks and delicacies by IC	IfL OL
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3.3 Immunological tests of foodstuffs with ELISA and RIA *

ASU L 01.00-34 1989-12	Analysis of food products; Determination of aflatoxin M1 in milk and powdered milk with the aid of the enzyme-linked immunosorbent assay (ELISA) – Screening method	IfL OL
ASU L 01.00-67 1998-09	Analysis of food products - Search procedure for the presence of sulphadimidine residues in milk – Screening method with ELISA in the microtiter system <i>(also milk products)</i>	IfL OL

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ASU L 01.00-68 1998-09	Analysis of food products - Search procedure for the presence of chloramphenicol residues in milk – Screening method with ELISA in the microtiter system <i>(also milk products, meat and sausage products and fresh eggs)</i>	IfL OL
ASU L 01.00-70 2002-05	Analysis of food products - Search procedure for the presence of streptomycin and dihydrostreptomycin residues in milk – Screening method with ELISA in the microtiter system <i>(also milk products)</i>	IfL OL
LUFA Nord-West AA 3/5C-604 2016-06	Determination of tetracycline (ELISA) in milk and milk products, meat and sausage products, fresh eggs	IfL OL
LUFA Nord-West AA 3/5C-606 2016-06	Determination of macrolides (RIA) in milk and milk products	IfL OL
LUFA Nord-West AA 3/5C-607 2018-03	Determination of chloramphenicol (RIA) in milk and milk products	IfL OL
RANDOX InfiniPlex for Milk EV4076, RANDOX Food Diagnostic 2017	Multi-antibiotic and veterinary drug screening	IfL OL

3.4 Microbiological tests

3.4.1 Bacteriological and mycological culture methods for foodstuff tests **

ISO 4831 2006-08	Microbiology of food and animal feeding stuffs – Horizontal method for the detection and enumeration of coliforms – Most probable number technique	IfL OL
ISO 4832 2006-02	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coliforms – Colony-count technique	IfL OL
ISO 6611 2004-10	Milk and milk products — Enumeration of colony-forming units of yeasts and/or moulds — Colony-count technique at 25 °C	IfL OL
ISO 7251 2005-02	Microbiology of food and animal feeding stuffs – Horizontal method for the detection and enumeration of presumptive Escherichia coli - Most probable number technique	IfL OL

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ISO 16649-2 2001-04	Microbiology of food and animal feeding stuffs — Horizontal method for the enumeration of β-glucuronidase-positive <i>Escherichia coli</i> – Part 2: Colony-count techniques at 44°C using 5-bromo-4-chloro-3-indolyl β-D-glucuronide	IfL OL
ISO 21527-1 2008-07	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of yeast and moulds – Part 1: Colony count technique in products with water activity greater than 0,95	IfL OL
ISO 21527-2 2008-07	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of yeast and moulds - Part 2: Colony count technique in products with water activity less than or equal to 0,95	IfL OL
DIN EN ISO 6222 1999-07	Water quality – Enumeration of culturable micro-organisms – Colony count by inoculation in a nutrient agar culture medium	IfL OL
DIN EN ISO 6579-1 2017-07	Microbiology of the food chain -- Horizontal method for the detection, enumeration and serotyping of <i>Salmonella</i> -- Part 1: Detection of <i>Salmonella</i> spp.	IfL OL
DIN EN ISO 7932 2005-03	Microbiology of food and animal feeding stuffs -- Horizontal method for the enumeration of presumptive <i>Bacillus cereus</i> - Colony-count technique at 30 degrees C	IfL OL
DIN EN ISO 9308-1 2017-09	Water quality - Enumeration of <i>Escherichia coli</i> and coliform bacteria -- Part 1: Membrane filtration method for waters with low bacterial background flora	IfL OL
DIN EN ISO 10272-1 2017-09	Microbiology of food and animal feeding stuffs – Horizontal method for detection and enumeration of <i>Campylobacter</i> spp. – Part 1: Detection method	IfL OL
DIN EN ISO 11290-1 2017-09	Microbiology of the food chain -- Horizontal method for the detection and enumeration of <i>Listeria monocytogenes</i> and of <i>Listeria</i> spp. - Part 1: Detection method	IfL OL
DIN EN ISO 11290-2 2017-09	Microbiology of the food chain -- Horizontal method for the detection and enumeration of <i>Listeria monocytogenes</i> and of <i>Listeria</i> spp. -- Part 2: Enumeration method	IfL OL
DIN EN ISO 21528-1 2017-09	Microbiology of the food chain - Horizontal method for the detection and enumeration of <i>Enterobacteriaceae</i> - Part 1: Detection of <i>Enterobacteriaceae</i>	IfL OL

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DIN EN ISO 21528-2 2017-09	Microbiology of the food chain - Horizontal method for the detection and enumeration of Enterobacteriaceae - Part 2: Colony-count technique	IfL OL
DIN EN ISO 21871 2006-04	Microbiology of food and animal feeding stuffs - Horizontal method for the determination of low numbers of presumptive <i>Bacillus cereus</i> - Most probable number technique (MPN) and detection method	IfL OL
DIN EN ISO 22964 2017-08	Microbiology of the food chain -- Horizontal method for the detection of <i>Cronobacter</i> spp.	IfL OL
ASU L 00.00-20 2018-03	Analysis of food products - Horizontal method for the detection, enumeration and serotyping of <i>Salmonella</i> spp. – Part 1: Detection of <i>Salmonella</i> spp. (takeover of the German standard DIN EN ISO 6579-1 with the same title, version Juli 2017)	IfL OL
ASU L 00.00-22 2018-03	Analysis of food products - Horizontal method for the detection and enumeration of <i>Listeria monocytogenes</i> and <i>Listeria</i> spp. – Part 2: Enumeration method (takeover of the German standard DIN EN ISO 11290-2 with the same title, version September 2017)	IfL OL
ASU L 00.00-32 2018-03	Analysis of food products - Horizontal method for the detection and enumeration of <i>Listeria monocytogenes</i> and <i>Letsria</i> spp. – Part 1: Detection method (takeover of the German standard DIN EN ISO 11290-1 with the same title, version September 2017)	IfL OL
ASU L 00.00-55 2004-12	Analysis of food products - Method for the enumeration of coagulase-positive staphylococci (<i>Staphylococcus aureus</i> and other species) in food products - Part 1: Technique using Baird-Parker agar medium (takeover of the German standard DIN EN ISO 6888-1 with the same title, version December 2003)	IfL OL
ASU L 00.00-57 2006-12	Analysis of food products - Method for the enumeration of <i>Clostridium perfringens</i> in food products – Colony-count technique (takeover of the German standard DIN EN ISO 7937 with the same title, version November 2004)	IfL OL
ASU L 00.00-88/1 2015-06	Analysis of food products – Horizontal method for the enumeration of microorganisms – Part 1: Colony-count technique at 30°C by th pour plate technique (takeover of the German standard DIN EN ISO 4833-1 with the same title, version December 2013)	IfL OL

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Annex to the accreditation certificate D-PL-14165-01-00

ASU L 00.00-100 2006-12	Analysis of food products - Horizontal method for the enumeration of coagulase-positive staphylococci (<i>Staphylococcus aureus</i> and other species) in food products – Detection and MPN technique for low numbers (takeover of the german standard DIN EN ISO 6888-3 with the same title version July 2005)	IfL OL
ASU L 01.00-2 1991-12	Analysis of food products; Determination of coliform bacteria in milk, milk products, butter, cheese and ice cream; Method with liquid culture medium (according to DIN 10172-1)	IfL OL
ASU L 01.00-3 1987-03	Analysis of food products; Determination of of coliform bacteria in milk, milk products, butter, cheese and ice cream – Method with solid medium (according to DIN 10172-3)	IfL OL
ASU L 01.00-25 1997-09	Analysis of food products - Determination of <i>Escherichia coli</i> in milk, milk products, butter, cheese and ice cream – Method with liquid medium	IfL OL
ASU L 01.00-37 1991-12	Analysis of food products; Enumeration of yeasts and moulds in milk and milk products; reference method	IfL OL
ASU L 01.00-72 2011-01	Analysis of food products - Determination of presumptive <i>Bacillus cereus</i> in milk and milk products – Part 1: Colony count technique at 37°C (takeover of the german standard DIN 10198 with the same title version July 2010) <i>(Modification: incubation temperature 30°C, concentration polymyxin-B-sulphate)</i>	IfL OL
ASU L 02.07-2 1987-03	Analysis of food products; Determination of coagulase-positive staphylococci in dried milk products and processed cheese; Selective enrichment method	IfL OL
ASU L 06.00-31 1992-06	Analysis of food products; Determination of lactobacilli in meat and meat products; spatula method (reference method) <i>(according to DIN 10168)</i> <i>(withdrawn standard)</i>	IfL OL
VDLUFA VI, M 7.3.2 1985-01	Determination of albumen replacers (proteolites): Method with calcium caseinate agar (for caseolytes)	IfL OL
VDLUFA VI, M 7.6.2 1985-01	Determination of fat splitters (lipolites): Colony count method with tributyl agar	IfL OL
VDLUFA VI, M 7.8.2 1993	Determination of enterococci: colony count technique with Kanamycin aesculine azide agar	IfL OL

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VDLUFA VI, M 7.9.2 1988	Determination of lactobacilli: colony count method with ROGOSA agar	IfL OL
VDLUFA VI, M 7.9.3 1996	Detection of heterofermentative gas-forming lactic acid bacteria	IfL OL
VDLUFA VI, M 7.12.2 1993	Determination of pseudomonas: colony count method with C-F-C selective agar <i>(Modification: use of GSP agar)</i>	IfL OL
VDLUFA VI, M 7.13 1996	Determination of thermoduric (thermoresistant) microorganisms	IfL OL
VDLUFA VI, M 7.16.2 1985-01	Determination of acid-forming microorganisms: colony count method with Chinablue-Lactose-Agar	IfL OL
VDLUFA VI, M 7.17.2 1993	Determination of spores from aerobic spore-forming bacteria (bacillus)	IfL OL
VDLUFA VI, M 7.18.4 1988	Determination of sulphite-reducing clostridia <i>(Modification: casting plate method, area of application: foodstuffs)</i>	IfL OL
LUFA Nord-West AA 3/5M-223 2016-09	Quick method for the determination of salmonella in powdered milk	IfL OL

3.4.2 Bacteriological and mycological culture methods for hygienic status controls **

ISO 16649-2 2001-04	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-glucoronide	IfL OL
DIN EN ISO 6579-1 2017-07	Microbiology of the food chain -- Horizontal method for the detection, enumeration and serotyping of Salmonella -- Part 1: Detection of Salmonella spp.	IfL OL
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	IfL OL
DIN EN ISO 21528-1 2017-09	Microbiology of the food chain - Horizontal method for the detection and enumeration of Enterobacteriaceae - Part 1: Detection of Enterobacteriaceae	IfL OL

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DIN EN ISO 21528-2 2017-09	Microbiology of the food chain -- Horizontal method for the detection and enumeration of Enterobacteriaceae -- Part 2: Colony-count technique	IfL OL
DIN 10113-2 1997-07	Determination of surface colony count on fitment and utensils in food areas – Part 2: Semiquantitative swab method <i>(Modification: Sampling by the customer, casting plate method, communication of results)</i>	IfL OL
ASU L 00.00-20 2018-03	Analysis of food products - Horizontal method for the detection, enumeration and serotyping of Salmonella spp. – Part 1: Detection of Salmonella spp. (takeover of the German standard DIN EN ISO 6579-1 with the same title, version Juli 2017)	IfL OL
ASU L 00.00-88/1 2015-06	Analysis of food products – Horizontal method for the enumeration of microorganisms – Part 1: Colony-count technique at 30°C by th pour plate technique (takeover of the German standard DIN EN ISO 4833-1 with the same title, version December 2013)	IfL OL

3.4.3 Determination of inhibitors in milk and milk products with microbiological testing systems

ASU L 01.00-11 1996-02	Analysis of food products - Search procedure for the presence of antiinfectives in milk – Agar diffusion method with bacillus stearothermophilus (brilliant black reduction test)	IfL OL
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4 Tests at Site 4 – Institut für Boden und Umwelt (IfB), Institut für Düngemittel und Saatgut (IfD)

4.1 Chemical, chemical-physical and sensory tests of water, Sampling of untreated water and drinking water

4.1.1 Tests according to the 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 programms 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) 2013-03	Water quality - Sampling - Part 3: Guidance on the preservation and handling of water samples
DIN EN ISO 19458 (K 19) 2006-12	Water quality - Sampling for microbiological analysis

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Recommendation of the Federal Environment Agency 18 December 2018	Assessment of drinking water quality regarding the parameter lead, copper and nickel
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ANNEX 1: MICROBIOLOGICAL PARAMETERS

PART I: General requirements for drinking water

Not documented

PART II: Requirements for drinking water for dispensing from closed containers

Not documented

ANNEX 2: CHEMICAL PARAMETERS

PART I: Chemical parameters for which the concentrations in the distribution network, including the drinking water installation, as a rule no longer increase

No.	Parameter	Method
1	Acrylamide	DIN 38413-P 6; 2007-02
2	Benzene	DIN 38407-F 9; 1991-05 (<i>standard withdrawn</i>)
3	Boron	DIN EN ISO 11885 (E 22); 2009-09
4	Bromate	In-house method LC-MS/MS AA4/1C-058 Determination of bromate in water by high-performance liquid chromatography and mass-spectrometric detection (HPLC-MS/MS) 2016-09
5	Chromium	DIN EN ISO 17294-2 (E 29); 2005-02 (<i>standard withdrawn</i>)
6	Cyanide	DIN 38405-D 13; 2011-04
7	1,2-dichlorethane	DIN EN ISO 10301 (F 4); 1997-08
8	Fluoride	DIN 38405-D 4; 1985-07
9	Nitrate	DIN EN ISO 13395 (D 28); 1996-12
10	Active ingredients in pesticides and biocidal products	DIN 38 407-2 (F2); 1993-02 (<i>standard withdrawn</i>) DIN 38407-35 (F35); 2010-10 DIN 38407-36 (F36); 2014-09 DIN 38407-47 (F 47); 2017-07
11	Total active ingredients in pesticides and biocidal products	DIN 38 407-2 (F2); 1993-02 (<i>standard withdrawn</i>) DIN 38407-35 (F35); 2010-10 DIN 38407-36 (F36); 2014-09 DIN 38407-47 (F 47); 2017-07
12	Mercury	DIN EN ISO 12846 (E 12), 2012-08
13	Selenium	DIN 38405-D 23; 1994-10
14	Tetrachloroethene and trichloroethene	DIN EN ISO 10301 (F 4), 1997-08
15	Uranium	DIN EN ISO 17294-2 (E 29); 2005-02 (<i>standard withdrawn</i>)

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PART II: Chemical parameters for which the concentrations in the distribution network, including the drinking water installation, can increase

No.	Parameter	Method
1	Antimony	DIN EN ISO 17294-2 (E 29); 2005-02 (<i>standard withdrawn</i>)
2	Arsenic	DIN EN ISO 17294-2 (E 29); 2005-02 (<i>standard withdrawn</i>)
3	Benzo(a)pyrene	DIN 38407-39 (F 39); 2011-09
4	Lead	DIN EN ISO 17294-2 (E 29); 2005-02 (<i>standard withdrawn</i>)
5	Cadmium	DIN EN ISO 17294-2 (E 29); 2005-02 (<i>standard withdrawn</i>)
6	Epichlorohydrine	Not documented
7	Copper	DIN EN ISO 11885 (E 22); 2009-09
8	Nickel	DIN EN ISO 17294-2 (E 29); 2005-02 (<i>standard withdrawn</i>)
9	Nitrite	DIN EN ISO 13395 (D 28); 1996-12
10	Polycyclic aromatic hydrocarbons	DIN 38407-39 (F 39); 2011-09
11	Trihalomethanes	DIN EN ISO 10301 (F 4); 1997-08
12	Vinyl chloride	Not documented

ANNEX 3: INDICATOR PARAMETERS

PART I: General indicator parameters

No.	Parameter	Method
1	Aluminium	DIN EN ISO 11885 (E 22); 2009-09
2	Ammonia	DIN EN ISO 11732 (E 23); 2005-05
3	Chloride	DIN EN ISO 10304-1 (D 20); 2009-07
4	Clostridium perfringens (including spores)	Not documented
5	Coliform bacteria	Not documented
6	Iron	DIN EN ISO 11885 (E 22); 2009-09
7	Colour (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 (Annex C)
9	Taste	DEV B 1/2 part a; 1971
10	Colony count at 22 °C	Not documented
11	Colony count at 36 °C	Not documented
12	Electrical conductivity	DIN EN 27888 (C 8); 1993-11
13	Manganese	DIN EN ISO 11885 (E 22); 2009-09
14	Sodium	DIN EN ISO 11885 (E 22); 2009-09
15	Total organically bound carbon (TOC)	DIN EN 1484 (H 3); 1997-08
16	Oxidizability	DIN EN ISO 8467 (H 5); 1995-05
17	Sulphate	DIN EN ISO 10304-1 (D 20); 2009-07
18	Turbidity	DIN EN ISO 7027 (C 2); 2000-04

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No.	Parameter	Method
19	Hydrogen ion concentration	DIN EN ISO 10523; 2012-04
20	Calcite solubility	Not documented

PART II: Special requirements for drinking water in drinking water installation facilities

Not documented

Annex 3a: Requirements for drinking water in relation to radioactive material

Not documented

Parameters not included in Annex 1 to 3 of the Drinking Water Ordinance:

Other periodic tests

Parameter	Method
Calcium	DIN EN ISO 11885 (E 22); 2009-09
Potassium	DIN EN ISO 11885 (E 22); 2009-09
Magnesium	DIN EN ISO 11885 (E 22); 2009-09
Acid capacity	DIN 38409-H 7; 2005-12
Phosphate	DIN EN ISO 6878 (D 11); 2004-09

The accreditation does not replace the validation or certification process requirement of the relevant authority in accordance with Article 15, Paragraph 4 of the Drinking Water Ordinance.

4.1.2 Selected chemical and chemical-physical parameters in drinking water and other water

DIN 38404-C 4 1976-12	German Standard Methods for Analysing of Water, Waste Water and Sludge; Physical and Physical-chemical Parameters (Group C); Determination of Temperature (C4)	IfB HM IfD HM
DIN 38404-6 (C 6) 1984-05	German standard methods for the examination of water, waste water and sludge; physical and physico-chemical parameters (group C); determination of the oxidation reduction (redox) potential (C6)	IfB HM IfD HM
DIN 38407-42 (F 42) 2011-03	German standard methods for the examination of water, waste water and sludge – Jointly determinable substances (group F) –Part 42: 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	IfB HM IfD HM

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DIN ISO 17289 (G 25) 2014-12	Water quality – Determination of dissolved oxygen – Optical sensor method	IfB HM IfD HM
DIN 38409-H 2-3 1987-03	German standard methods for the examination of water, waste water and sludge; parameters characterizing effects and substances (group H); determination of filterable matter and the residue on ignition (H 2)	IfB HM IfD HM
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	IfB HM IfD HM
DIN ISO 11349 (H 56) 2015-12	Water quality – Determination of low-volatility lipophilic substances – Gravimetric method	IfB HM IfD HM
ISO 25101 2009-03	Water quality – Determination of perfluorooctane sulphonate (PFOS) and perfluorooctanoate (PFOA) – Method for unfiltered samples using solid phase extraction and liquid chromatography/mass spectrometry	IfB HM IfD HM

Remark: All drinking water methods described in 4.1 are also correspondingly accredited for other water and are not listed separately.

4.2 Analysis of industrial water in accordance with the Ordinance on Evaporative Cooling Systems, Cooling Towers and Wet Separators – Paragraph 3 (8) 42nd BImSchV 2017

Sampling

Verfahren	Titel
DIN EN ISO 19458 (K 19) 2006-12	Water quality - Sampling for microbiological analysis Recommendation of the Federal Environment Agency for the sampling and detection of Legionella in evaporative cooling systems, cooling towers and wet separators from 02.06.2017, Section C and D

Microbiologic tests

Not documented

- Translation -

**4.3 List of test methods for the technical module WATER,
Version: LAWA of 13.11.2015**

Subarea 1: Sampling and general parameters

Parameter	Method	WW	SW	GRW
Sampling waste water	DIN 38402-A 11: 2009-02	<input checked="" type="checkbox"/>		
Sampling from running waters	DIN 38402-A 15: 1986-07		<input checked="" type="checkbox"/>	
	DIN 38402-A 15: 2010-04		<input checked="" type="checkbox"/>	
Sampling from aquifers	DIN 38402-A 13: 1985-12			<input type="checkbox"/>
Sampling from barrages and lakes	DIN 38402-A 12: 1985-06		<input checked="" type="checkbox"/>	
Homogenisation of samples	DIN 38402-A 30: 1998-07	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Temperature	DIN 38404-C 4: 1976-12	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
pH	DIN EN ISO 10523: 2012-04	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Conductivity (25°C)	DIN EN 27888: 1993-11 (C 8)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Odour	DIN EN 1622: 2006-10 (B 3) Anlage C	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Colour	DIN EN ISO 7887: 1994-12 (C 1) Abschn. 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Turbidity	DIN EN ISO 7027: 2000-04 (C 2)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Oxygen	DIN EN 25814: 1992-11 (G 22)		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Redox potential	DIN 38404-C 6: 1984-05			<input type="checkbox"/>

Subarea 2: Photometry, ion chromatography and volumetric analysis

Parameter	Method	WW	SW	GRW
UV absorption at 254 nm (SAC 254)	DIN 38404-C 3: 2005-07		<input checked="" type="checkbox"/>	<input type="checkbox"/>
UV absorption at 436 nm (SAC 436)	DIN EN ISO 7887: 2012-09 (C 1)		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Ammonia nitrogen	DIN EN ISO 11732: 2005-05 (E 23)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38406-E 5: 1983-10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 14911: 1999-12 (E 34)		<input type="checkbox"/>	<input type="checkbox"/>
	DIN ISO 15923-1: 2014-07 (D 49)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nitrite nitrogen	DIN EN 26777: 1993-04 (D 10)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 10304-1: 2009-07 (D 20)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 13395: 1996-12 (D 28)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN ISO 15923-1: 2014-07 (D 49)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nitrate nitrogen	DIN EN ISO 10304-1: 2009-07 (D 20)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 13395: 1996-12 (D 28)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38405-D 9: 2011-09	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN 38405-D 29: 1994-11		<input type="checkbox"/>	<input type="checkbox"/>
Total phosphorus	DIN ISO 15923-1: 2014-07 (D 49)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 6878: 2004-09 (D 11)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15681-1: 2005-05 (D 45)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Parameter	Method	WW	SW	GRW
Orthophosphate	DIN EN ISO 15681-2: 2005-05 (D 46)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 10304-1: 2009-07 (D 20)		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 6878: 2004-09 (D 11)		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15681-1: 2004-07 (D 45)		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15681-2: 2005-05 (D 46)		<input type="checkbox"/>	<input type="checkbox"/>
Fluoride (dissolved)	DIN 38405-D 4, Abschn. 1985-07	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 10304-1: 2009-07 (D 20)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chloride	DIN EN ISO 10304-1: 2009-07 (D 20)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15682: 2002-01 (D 31)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN ISO 15923-1: 2014-07 (D 49)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 10304-4: 1999-07 (D 25)		<input type="checkbox"/>	<input type="checkbox"/>
	DIN 38405-D 1: 1985-12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sulphate	DIN EN ISO 10304-1: 2009-07 (D 20)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38405-D 5: 1985-01	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN ISO 15923-1: 2014-07 (D 49)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cyanide (easily liberatable)	DIN 38405-D 13-2: 1981-02	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 14403-1: 2012-10 (D 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 14403-2: 2012-10 (D 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN 38405-D 7: 2002-04		<input type="checkbox"/>	<input type="checkbox"/>
Cyanide (total)	DIN 38405-D 13-2: 1981-02	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 14403-1: 2012-10 (D 2)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 14403-2: 2012-10 (D 3)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN 38405-D 7: 2002-04		<input type="checkbox"/>	<input type="checkbox"/>
Chromium VI	DIN 38405-D 24: 1987-05	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 10304-3: 1997-11 (D 22), Abschn. 6 (gelöstes Chromat)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 23913: 2009-09 (D 41)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 18412: 2007-02 (D 40)		<input type="checkbox"/>	<input type="checkbox"/>
Sulphide (readily liberated)	DIN 38405-D 27: 1992-07	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Subarea 3: Elemental analysis

Parameter	Method	WW	SW	GRW
Aluminium	DIN EN ISO 11885: 2009-09 (E 22)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 12020: 2000-05 (E 25)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15586: 2004-02 (E 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Arsenic	DIN EN ISO 11969: 1996-11 (D 18)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 11885: 2009-09 (E 22)	<input type="checkbox"/>		
	DIN EN ISO 17294-2: 2005-02 (E 29)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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Parameter	Method	WW	SW	GRW
	DIN EN ISO 15586: 2004-02 (E 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN 38405-D 35: 2004-09	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lead	DIN EN ISO 11885: 2009-09 (E 22)	<input checked="" type="checkbox"/>		
	DIN 38406-E 6: 1998-07	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15586: 2004-02 (E 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cadmium	DIN EN ISO 11885: 2009-09 (E 22)	<input checked="" type="checkbox"/>		
	DIN EN ISO 5961: 1995-05 (E 19)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15586: 2004-02(E 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calcium	DIN EN ISO 11885: 2009-09 (E 22)		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38406-E 3: 2002-03		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 7980: 2000-07 (E 3a)		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 14911: 1999-12 (E 34)		<input type="checkbox"/>	<input type="checkbox"/>
Chromium	DIN EN ISO 11885: 2009-09 (E 22)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN 1233: 1996-08 (E 10)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15586: 2004-02 (E 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Iron	DIN EN ISO 11885: 2009-09 (E 22)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38406-E 32: 2000-05	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15586: 2004-02 (E 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN 38406-E 1: 1983-05		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E29), mit Kollisionszelle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Potassium	DIN 38406-E 13: 1992-07		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 11885: 2009-09 (E 22)		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 14911: 1999-12 (E 34)		<input type="checkbox"/>	<input type="checkbox"/>
Copper	DIN EN ISO 11885: 2009-09 (E 22)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38406-E 7: 1991-09	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15586: 2004-02 (E 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manganese	DIN EN ISO 11885: 2009-09 (E 22)			<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)			<input type="checkbox"/>
	DIN 38406-E 33: 2000-06			<input type="checkbox"/>
	DIN EN ISO 15586: 2004-02 (E 4)			<input type="checkbox"/>
	DIN EN ISO 14911: 1999-12 (E 34)			<input type="checkbox"/>
Sodium	DIN 38406-E 14: 1992-07		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 11885: 2009-09 (E 22)		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 14911: 1999-12 (E 34)		<input type="checkbox"/>	<input type="checkbox"/>

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Parameter	Method	WW	SW	GRW
Nickel	DIN EN ISO 11885: 2009-09 (E 22)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN 38406-E 11: 1991-09	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15586: 2004-02 (E 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mercury	DIN EN 1483: 2007-07 (E 12)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO17852: 2008-04 (E 35)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 12846: 2012-08 (E 12)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Zinc	DIN EN ISO 11885: 2009-09 (E 22)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38406-E 8: 2004-10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15586: 2004-02 (E 4)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Boron	DIN EN ISO 11885: 2009-09 (E 22)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Magnesium	DIN EN ISO 11885: 2009-09 (E 22)		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38406-E 3: 2002-03		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 7980: 2000-07 (E 3a)		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 14911: 1999-12 (E 34)		<input type="checkbox"/>	<input type="checkbox"/>
Phosphorus (phosphorus compounds in the original sample as phosphorus)	DIN EN ISO 11885: 2009-09 (E 22)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 17294-2: 2005-02 (E 29)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Subarea 4/5: Group and sum parameters

Parameter	Method	WW	SW	GRW
Biological oxygen demand (BOD ₅)	DIN EN 1899-1: 1998-05 (H 51)	<input checked="" type="checkbox"/>		
	DIN EN 1899-2: 1998-05 (H 52)		<input checked="" type="checkbox"/>	
Chemical oxygen demand (COD)	DIN 38409-H 41: 1980-12	<input checked="" type="checkbox"/>		
	DIN 38409-H 44: 1992-05		<input checked="" type="checkbox"/>	
	DIN ISO 15705: 2003-01 (H 45)		<input type="checkbox"/>	
Phenol index	DIN 38409-H 16-2: 1984-06	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38409-H 16-1: 1984-06		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 14402: 1999-12 (H 37)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Verfahren nach Abschn. 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Filterable matter	DIN EN 872: 2005-04 (H 33)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
	DIN 38409-H 2-3: 1987-03		<input checked="" type="checkbox"/>	
Acid and base-neutralizing capacities	DIN 38409-H 7: 2005-12		<input type="checkbox"/>	<input type="checkbox"/>
Total organic carbon (TOC)	DIN EN 1484: 1997-08 (H 3)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Dissolved organic carbon (DOC)	DIN EN 1484: 1997-08 (H 3)			<input type="checkbox"/>
Total bound nitrogen (TN _b)	DIN EN 12260: 2003-12 (H 34)	<input type="checkbox"/>	<input type="checkbox"/>	

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Parameter	Method	WW	SW	GRW
	DIN EN ISO 11905-1: 1998-08 (H 36)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Adsorbable organically bound halogens (AOX)	DIN EN ISO 9562: 2005-02 (H 14)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38409-H 22: 2001-02		<input type="checkbox"/>	<input type="checkbox"/>

Subarea 6: Gaschromatographic methods

Parameter	Method	WW	SW	GRW
Volatile halogenated hydrocarbons	DIN EN ISO 10301: 1997-08 (F 4)*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38407-F 43: 2014-10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15680: 2004-04 (F 19)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Benzene and derivatives (BTEX)	DIN 38407-F 9: 1991-05*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38407-F 43: 2014-10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 15680: 2004-04 (F 19)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Organochlorine insecticides (OCP)	DIN 38407-F 2: 1993-02*		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN EN ISO 6468: 1997-02 (F 1)*		<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN 38407-F 37: 2013-11		<input type="checkbox"/>	<input type="checkbox"/>
Polychlorinated biphenyls (PCB)	DIN EN ISO 6468: 1997-02 (F 1)*		<input type="checkbox"/>	<input type="checkbox"/>
	DIN 38407-F 2: 1993-02*		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38407-F 3: 1998-07		<input type="checkbox"/>	<input type="checkbox"/>
Mono-, dichlorobenzenes	DIN EN ISO 15680: 2004-04 (F 19)		<input type="checkbox"/>	<input type="checkbox"/>
	DIN 38407-F 43: 2014-10		<input type="checkbox"/>	<input type="checkbox"/>
Tri- to hexachlorobenzene	DIN EN ISO 6468: 1997-02 (F 1)*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN 38407-F 2: 1993-02*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38407-F 43: 2014-10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	DIN EN 38407-F 37: 2013-11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chlorophenols	DIN EN 12673: 1999-05 (F 15)		<input type="checkbox"/>	<input type="checkbox"/>
Organophosphorus and organonitrogen compounds	DIN EN ISO 10695: 2000-11 (F 6) *		<input type="checkbox"/>	<input type="checkbox"/>
Polycyclic aromatic hydrocarbons (PAH)**	DIN 38407-F 39: 2011-09	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN ISO 28540: 2014-05 (F 40)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hydrocarbon index	DIN EN ISO 9377-2: 2001-07 (H 53)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

* Mass spectrometric detection permitted

** Subarea 6 is also completely fulfilled when PAH is analysed according to a procedure from Subarea 7

Subarea 7: HPLC methods

Parameter	Method	WW	SW	GRW
Polycyclic aromatic hydrocarbons (PAH)**	DIN EN ISO 17993: 2004-03 (F 18)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Plant production products and Pesticides (Procedures to be applied according to substance-specific requirements.)	DIN EN ISO 11369: 1997-11 (F 12) *		<input type="checkbox"/>	<input type="checkbox"/>
	DIN 38407-F 35: 2010-10		<input checked="" type="checkbox"/>	<input type="checkbox"/>
	DIN 38407-F 36: 2014-09		<input checked="" type="checkbox"/>	<input type="checkbox"/>

* Mass spectrometric detection permitted

** Subarea 7 is also completely fulfilled when PAH is analysed according to a procedure from Subarea 6

Subarea 8: Microbiological methods

Not documented

Subarea 9.1: Biological methods, Biotests (Part 1)

Not documented

Subarea 9.2: Biological methods, Biotests (Part 2)

Not documented

**4.4 List of test methods for the technical module SOIL AND CONTAMINATED SITES,
Site: Hameln
Version: LABO of 16.08.2012**

Testing area 1: Solid matter

Subarea 1.1 Sampling and on-site tests

Test parameter	Methods/Notes	Procedure	
Design of sampling programmes		BBodSchV DIN ISO 10381-1: 2003 DIN ISO 10381-5: 2007	<input checked="" type="checkbox"/>
Sampling in the investigation of areas with suspected contamination and contaminated sites	Manual drilling, Ramming core sampling 50 – 80mm, Samples in undisturbed bedding	DIN ISO 10381-2: 2003 DIN EN ISO 22475-1: 2007	<input checked="" type="checkbox"/>
	Pile sampling	LAGA PN 98: 2001	

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Test parameter	Methods/Notes	Procedure	
Sampling in the investigation of areas with suspected contamination and contaminated sites on volatile pollutants after the outcrop	The extracting agent has to be submitted in the sample vessels before sampling	HLUG Contaminated sites handbook Vol. 7, Part 4 2000	<input checked="" type="checkbox"/>
Sampling in the investigation of natural, semi-natural and cultural locations		DIN ISO 10381-4: 2004 VDLUFA book of methods Volume 1, part A1	<input checked="" type="checkbox"/>
Sampling of sediments		DIN 38414-11: 1987	<input checked="" type="checkbox"/>
Sampling of suspended matters - optional		DIN 38402-24: 2007	<input type="checkbox"/>
Characterization of samples		Tool for soil description related to soil conservation and remediation, excerpt from KA5, 2009 Pedological mapping guide 5th Edition (KA5): 2005	<input checked="" type="checkbox"/>
	Series of standards geotechnical exploration and investigation	DIN EN ISO 14688-1: 2011 DIN EN ISO 14689-1: 2011 DIN EN ISO 22475-1: 2007	<input checked="" type="checkbox"/>
Grain-size distribution	Finger test in the field	Tool for soil description related to soil conservation and remediation, excerpt from KA5, 2009 Pedological mapping guide 5th Edition (KA5): 2005 DIN 19682-2: 2007	<input checked="" type="checkbox"/>
Sample storage, In situ sample pretreatment, sample transport		DIN 19747: 2009 DIN ISO 10381-1: 2003 DIN ISO 10831-2: 2003 DIN ISO 18512: 2009	<input type="checkbox"/>
	Overlaying the soil in situ with solvent in the investigation of volatile contaminants	DIN ISO 22155: 2006	<input checked="" type="checkbox"/>

Subarea 1.2 Laboratory - Analysis of inorganic parameters

Base parameters and sample preparation			
Test parameter	Methods/Notes	Procedure	
Preparation and processing of samples		DIN 19747: 2009	<input checked="" type="checkbox"/>
Dry matter		DIN ISO 11465: 1996	<input type="checkbox"/>
		DIN EN 14346: 2007	<input checked="" type="checkbox"/>
Organic carbon and total organic carbon after dry combustion (TOC)	Soil samples dried in air	DIN ISO 10694: 1996	<input checked="" type="checkbox"/>
		DIN EN 13137: 2001	<input type="checkbox"/>
		DIN EN 15936: 2012	<input type="checkbox"/>
pH (CaCl ₂)		DIN ISO 10390: 2005	<input checked="" type="checkbox"/>
Bulk density – optional		DIN ISO 11272: 2001	<input type="checkbox"/>
Particle size distribution – optional	Pipette analysis	DIN ISO 11277: 2002	<input type="checkbox"/>
	Areometer method	DIN 18123: 2011 with LAGA PN98	<input type="checkbox"/>

Analysis of inorganic parameters			
Test parameter	Methods/Notes	Procedure	
Aqua regia extract	Thermal, open vessel	DIN ISO 11466: 1997	<input type="checkbox"/>
	Microwave digestion	DIN EN 13657: 2003	<input checked="" type="checkbox"/>
Ammonium nitrate extract		DIN 19730: 2009	<input checked="" type="checkbox"/>
Alkaline digestion method - optional	Metaborate melt digestion for chromium(VI) analysis	DIN EN 15192: 2007	<input type="checkbox"/>
Extraction for determination of thallium - optional	HNO ₃ , H ₂ O ₂	DIN ISO 20279: 2006	<input type="checkbox"/>
Arsenic (As) Antimony (Sb)	ICP-OES	DIN ISO 22036: 2009	<input type="checkbox"/>
	ICP-MS	DIN EN ISO 17294-2: 2005	<input checked="" type="checkbox"/>
	ET-AAS or hydride-AAS	DIN ISO 20280: 2010	<input type="checkbox"/>
Cadmium (Cd)	ET-AAS	DIN ISO 11047: 2003	<input type="checkbox"/>
Chromium (Cr), total			
Cobalt (Co)	ICP-OES	DIN ISO 22036: 2009	<input checked="" type="checkbox"/>
Copper (Cu)			
Nickel (Ni)			
Lead (Pb)	ICP-MS	DIN EN ISO 17294-2: 2005	<input checked="" type="checkbox"/>
Zinc (Zn)			
Mercury (Hg)	AAS	DIN EN 1483: 2007	<input checked="" type="checkbox"/>

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Analysis of inorganic parameters			
Test parameter	Methods/Notes	Procedure	
	Cold vapour AAS or cold vapour AFS	DIN ISO 16772: 2005	<input type="checkbox"/>
Cyanides		DIN ISO 17380: 2011	<input type="checkbox"/>
		DIN ISO 11262: 2012	<input checked="" type="checkbox"/>
Chromium (VI) - optional	IC with photometric detection	DIN EN 15192: 2007	<input type="checkbox"/>
Molybdenum (Mo)	ICP-OES	DIN ISO 22036: 2009	<input type="checkbox"/>
Vanadium (V) – optional	ICP-MS	DIN EN ISO 17294-2: 2005	<input type="checkbox"/>
Selenium (Se) – optional	ICP-OES	DIN ISO 22036: 2009	<input type="checkbox"/>
	ICP-MS	DIN EN ISO 17294-2: 2005	<input type="checkbox"/>
	ET-AAS or hydride-AAS	DIN ISO 20280: 2010	<input type="checkbox"/>
Thallium (Tl) from the HNO ₃ /H ₂ O ₂ extract – optional	ET-AAS	DIN ISO 20279: 2006	<input type="checkbox"/>
	ICP-OES	DIN ISO 22036: 2009	<input type="checkbox"/>
	ICP-MS	DIN EN ISO 17294-2: 2005	<input type="checkbox"/>
Uranium (U)	ICP-OES	DIN ISO 22036: 2009	<input type="checkbox"/>
Tungsten (W) - optional	ICP-MS	DIN EN ISO 17294-2: 2005	<input type="checkbox"/>

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Subarea 1.3 Laboratory - Analysis of organic parameters

Base parameters and sample preparation			
Test parameter	Methods/Notes	Procedure	
Preparation and processing of samples		DIN 19747: 2009	<input checked="" type="checkbox"/>
Dry matter		DIN ISO 11465: 1996	<input type="checkbox"/>
		DIN EN 14346: 2007	<input checked="" type="checkbox"/>
Organic carbon and total organic carbon after dry combustion (TOC)	Soil samples dried in air	DIN ISO 10694: 1996	<input checked="" type="checkbox"/>
		DIN EN 13137: 2001	<input type="checkbox"/>
		DIN EN 15936: 2012	<input type="checkbox"/>
pH (CaCl ₂)		DIN ISO 10390: 2005	<input checked="" type="checkbox"/>
Bulk density – optional		DIN ISO 11272: 2001	<input type="checkbox"/>
Particle size distribution – optional	Pipette analysis	DIN ISO 11277: 2002	<input type="checkbox"/>
	Areometer method	DIN 18123: 2011 with LAGA PN98	<input type="checkbox"/>

Analysis of organic parameters			
Test parameter	Methods/Notes	Procedure	
Polycyclic aromatic hydrocarbons (PAH) 16 PAH (EPA)	GC-MS	DIN ISO 18287: 2006	<input checked="" type="checkbox"/>
	HPLC-UV/F Acenaphthylene cannot be determined with a fluorescence detector	DIN ISO 13877: 2000	<input type="checkbox"/>
		DIN 38414-23: 2002	<input type="checkbox"/>
Hexachlorobenzene	GC - ECD, GC - MS	DIN ISO 10382: 2006	<input checked="" type="checkbox"/>
Pentachlorophenol	GC - ECD, GC - MS	DIN ISO 14154: 2005	<input checked="" type="checkbox"/>
Aldrin, DDT, HCH mixture	GC - ECD, GC - MS	DIN ISO 10382: 2003	<input checked="" type="checkbox"/>
		DIN EN 15308: 2008	<input type="checkbox"/>
Polychlorinated biphenyls (PCB)	GC - ECD, GC - MS Extraction with acetone/petroleum ether or Soxhlet extraction The type of sum formation must be given (PCB6/PCB7)	DIN ISO 10382: 2003	<input checked="" type="checkbox"/>
		DIN EN 15308: 2008	<input type="checkbox"/>
		DIN 38414-20: 1996	<input type="checkbox"/>
Explosive-typical compounds (HPLC) – optional	Extraction with methanol or acetonitrile and quantitation by HPLC-UV/DAD	E DIN ISO 11916-1: 2011	<input type="checkbox"/>

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Analysis of organic parameters			
Test parameter	Methods/Notes	Procedure	
Explosive-typical compounds (GC) – optional	Extraction with methanol. Recrystallisation in toluene and quantitation by GC-ECD or GC-MS	E DIN ISO 11916-2: 2011	<input type="checkbox"/>
Mineral oil hydrocarbons (C ₁₀ -C ₄₀) – optional	GC-FID	DIN ISO 16703: 2005	<input checked="" type="checkbox"/>
		LAGA KW/04: 2009	<input type="checkbox"/>
BTEX aromatic compounds, volatile hydrocarbons – optional	Headspace, GC	DIN ISO 22155: 2006	<input checked="" type="checkbox"/>

Testing area 1.4: Analysis - Dioxins and Furans

Base parameters and sample preparation			
Test parameter	Methods/Notes	Procedure	
Preparation and processing of samples		DIN 19747: 2009	<input checked="" type="checkbox"/>
Dry matter		DIN ISO 11465: 1996	<input type="checkbox"/>
		DIN EN 14346: 2007	<input checked="" type="checkbox"/>
Organic carbon and total organic carbon after dry combustion (TOC)	Soil samples dried in air	DIN ISO 10694: 1996	<input checked="" type="checkbox"/>
		DIN EN 13137: 2001	<input type="checkbox"/>
		DIN EN 15936: 2012	<input type="checkbox"/>
pH (CaCl ₂)		DIN ISO 10390: 2005	<input checked="" type="checkbox"/>
Bulk density – optional		DIN ISO 11272: 2001	<input type="checkbox"/>
Particle size distribution – optional	Pipette analysis	DIN ISO 11277: 2002	<input type="checkbox"/>
	Areometer method	DIN 18123: 2011 with LAGA PN98	<input type="checkbox"/>

Analysis of PCDD, PCDF and dioxin-like PCB			
Test parameter	Methods/Notes	Procedure	
PCDD / PCDF, dl-PCB	GC-MS, evaluation by the internal standard method using the corresponding 13C12 marked standards of a congener	DIN 38414-24: 2000 Dioxin-like PCB: in consideration of DIN 38407-3: 1998	<input checked="" type="checkbox"/>

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Testing area 2: Eluates and percolates, aqueous media

Subarea 2.1 Sampling and on-site tests

Sampling			
Test parameter	Methods/Notes	Procedure	
Design of sampling programmes and sampling techniques		DIN EN ISO 5667-1: 2007	<input checked="" type="checkbox"/>
Sampling of ground water	AQS-leaflet P 8/2: 1996	ISO 5667-11: 2009 DIN 38402-13: 1985 DVGW-worksheet W 112: 2011	<input type="checkbox"/>
Sampling of leachate		Currently no standardised method available; If applicable: E-DWA-M 905: 2008	<input checked="" type="checkbox"/>
Sampling of surface water (Running waters)	AQS-leaflet P 8/3: 1998	DIN 38402-15: 2010	<input checked="" type="checkbox"/>
Sampling of surface water (Barrages and lakes)		DIN 38402-12: 1985	<input checked="" type="checkbox"/>

on-site tests			
Test parameter	Methods/Notes	Procedure	
Colouring		DIN EN ISO 7887: 2012	<input checked="" type="checkbox"/>
Turbidity		DIN EN ISO 7027: 2000	<input checked="" type="checkbox"/>
Odour		DEV B1/2 1971	<input checked="" type="checkbox"/>
Temperature		DIN 38404-4: 1976	<input checked="" type="checkbox"/>
pH		DIN EN ISO 10523: 2012	<input checked="" type="checkbox"/>
Oxygen content		DIN EN 25814: 1992	<input checked="" type="checkbox"/>
Electrical conductivity		DIN EN 27888: 1993	<input checked="" type="checkbox"/>
Redox potential		DIN 38404-6: 1984	<input checked="" type="checkbox"/>
Sample storage, sample pretreatment, sample transport		DIN EN ISO 5667-3: 2004	<input checked="" type="checkbox"/>

Subarea 2.2 Laboratory - Analysis of eluates/percolates for inorganic parameters

Eluates/Percolates			
Test parameter	Methods/Notes	Procedure	
Batch test – leaching of inorganic substances		DIN 19529: 2009	<input checked="" type="checkbox"/>

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Eluates/Percolates			
Test parameter	Methods/Notes	Procedure	
Batch test – leaching of organic substances		DIN 19527: 2012	<input checked="" type="checkbox"/>
Batch test –leaching of inorganic substances - optional		DIN EN 12457-4: 2003	<input checked="" type="checkbox"/>
Percolation method for inorganic and organic substances - optional		DIN 19528: 2009	<input type="checkbox"/>
Test of absorption availability - optional		DIN 19738: 2004	<input type="checkbox"/>

Analysis of inorganic parameters			
Test parameter	Methods/Notes	Procedure	
Antimony (Sb) Arsenic (As)	ICP-OES	DIN EN ISO 11885: 2009	<input type="checkbox"/>
	ICP-OES	DIN ISO 22036: 2009	<input type="checkbox"/>
	ICP-MS	DIN EN ISO 17294-2: 2005	<input checked="" type="checkbox"/>
	ET-AAS or hydride-AAS	DIN ISO 20280: 2010	<input type="checkbox"/>
Lead (Pb) Cadmium (Cd) Chromium (Cr) total Cobalt (Co) Copper (Cu) Molybdenum (Mo) Nickel (Ni) Zinc (Zn)	ET-AAS	DIN EN ISO 15586: 2004	<input type="checkbox"/>
	ICP-OES	DIN EN ISO 11885: 2009	<input checked="" type="checkbox"/>
	ICP-OES	DIN ISO 22036: 2009	<input checked="" type="checkbox"/>
	ICP-MS	DIN EN ISO 17294-2: 2005	<input checked="" type="checkbox"/>
	AAS	DIN EN 1483: 2007	<input checked="" type="checkbox"/>
	Cold vapour AAS or cold vapour AFS	DIN ISO 16772: 2005	<input type="checkbox"/>
Cyanide (CN-), total Cyanide, easily liberatable	Spectral photometry	DIN EN ISO 14403: 2002	<input type="checkbox"/>
		DIN 38405-13: 2011	<input checked="" type="checkbox"/>
		DIN EN ISO 17380: 2011	<input type="checkbox"/>
Fluoride, chloride, sulphate	Ion chromatography	DIN EN ISO 10304-1:2009	<input checked="" type="checkbox"/>
	Individual methods	DIN 38405-1, -4, -5: 1985	<input type="checkbox"/>
Vanadium (V) - optional	ET-AAS	DIN EN ISO 15586: 2004	<input type="checkbox"/>

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Analysis of inorganic parameters			
Test parameter	Methods/Notes	Procedure	
	ICP-OES	DIN EN ISO 11885: 2009	<input type="checkbox"/>
	ICP-OES	DIN ISO 22036: 2009	<input type="checkbox"/>
	ICP-MS	DIN EN ISO 17294-2: 2005	<input checked="" type="checkbox"/>
Uranium (U) – optional	ICP-MS	DIN EN ISO 17294-2: 2005	<input checked="" type="checkbox"/>
Tin (Sn) Thallium (Tl) Tungsten (W) - optional	ICP-OES	DIN EN ISO 11885: 2009	<input type="checkbox"/>
	ICP-OES	DIN ISO 22036: 2009	<input type="checkbox"/>
	ICP-MS	DIN EN ISO 17294-2: 2005	<input checked="" type="checkbox"/>
Selenium (Se) - optional	ET-AAS	DIN EN ISO 15586: 2004	<input type="checkbox"/>
	ICP-OES	DIN EN ISO 11885: 2009	<input type="checkbox"/>
	ICP-OES	DIN ISO 22036: 2009	<input type="checkbox"/>
	ICP-MS	DIN EN ISO 17294-2: 2005	<input type="checkbox"/>
	ET-AAS or hydride-AAS	DIN ISO 20280: 2010	<input checked="" type="checkbox"/>
Chromium (Cr VI)	Spectral photometry	DIN 38405-24: 1987	<input checked="" type="checkbox"/>
	Ion chromatography	DIN EN ISO 10304-3: 1997	<input type="checkbox"/>

Subarea 2.3 Laboratory - Analysis of eluates/percolates for organic parameters

Eluates/Percolates			
Test parameter	Methods/Notes	Procedure	
Batch test –leaching of inorganic substances		DIN 19529: 2009	<input checked="" type="checkbox"/>
Batch test –leaching of organic substances		DIN 19527: 2012	<input checked="" type="checkbox"/>
Batch test –leaching of inorganic substances - optional		DIN EN 12457-4: 2003	<input checked="" type="checkbox"/>
Percolation method for organic and inorganic substances - optional		DIN 19528: 2009	<input type="checkbox"/>
Test of absorption availability - optional		DIN 19738: 2004	<input type="checkbox"/>

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Analysis of organic parameters			
Test parameter	Methods/Notes	Procedure	
Aromatic compounds (BTEX)	Purge + trap/desorption, GC-MS	DIN EN ISO 15680: 2004	<input type="checkbox"/>
	Liquid extraction or Headspace, GC	DIN 38407-9: 1991	<input checked="" type="checkbox"/>
	Headspace-SPME, GC-MS	DIN 38407-41: 2011	<input type="checkbox"/>
Volatile halogenated hydrocarbons	Purge + Trap/Desorption, GC-MS	DIN EN ISO 15680: 2004	<input type="checkbox"/>
	Liquid extraction or Headspace, GC	DIN EN ISO 10301: 1997	<input checked="" type="checkbox"/>
	Headspace-SPME, GC-MS	DIN 38407-41: 2011	<input type="checkbox"/>
Aldrin	GC-ECD, GC-MS	DIN EN ISO 6468: 1997	<input type="checkbox"/>
		DIN 38407-2: 1993	<input type="checkbox"/>
Dichlorodiphenyltrichloroethane (DDT)	GC-ECD, GC-MS	DIN EN ISO 6468: 1997	<input type="checkbox"/>
		DIN 38407-2: 1993	<input type="checkbox"/>
Chlorophenols	GC-ECD, GC-MS	DIN EN 12673: 1999	<input type="checkbox"/>
Chlorobzenes (Cl3-Cl6)	GC-ECD, GC-MS	DIN 38407-2: 1993	<input type="checkbox"/>
	Liquid extraction, GC-ECD, GC-MS	DIN EN ISO 6468: 1997	<input type="checkbox"/>
Chlorobzenes (Cl1-Cl3)	Liquid extraction or Headspace, GC-ECD, possibly MS	DIN EN ISO 10301: 1997	<input checked="" type="checkbox"/>
Polychlorinated biphenyls (PCB)	GC-ECD, GC-MS The type of sum formation must be given (PCB6 /PCB7)	DIN 38407-2: 1993	<input type="checkbox"/>
		DIN 38407-3: 1998	<input type="checkbox"/>
16 PAH (EPA)	HPLC-F	DIN EN ISO 17993: 2004	<input type="checkbox"/>
	GC-MS	DIN 38407-39: 2011	<input checked="" type="checkbox"/>
Naphthalene	GC-FID, GC-MS	DIN EN ISO 15680: 2004	<input type="checkbox"/>
		DIN 38407-9: 1991	<input checked="" type="checkbox"/>
Mineral oil hydrocarbons (C ₁₀ -C ₄₀)	GC-FID	DIN EN ISO 9377-2: 2001	<input checked="" type="checkbox"/>
Explosive-typical compounds (HPLC) - optional	HPLC / UV detection	DIN EN ISO 22478: 2006	<input type="checkbox"/>

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Analysis of organic parameters			
Test parameter	Methods/Notes	Procedure	
Explosive-typical compounds (GC) - optional	Determination of selected nitroaromatic compounds by GC	DIN 38407-17: 1999	<input type="checkbox"/>
Phenols- optional	GC-ECD, GC-MS	ISO 8165-2: 1999	<input type="checkbox"/>
		DIN EN 12673: 1999	<input type="checkbox"/>

Testing area 3 – Soil air, landfill gas

Subarea 3.1 Sampling and on-site tests

Not documented

Subarea 3.2 Laboratory - Analysis of soil air, landfill gas

Not documented

4.5 List of test methods for the technical module WASTE, Site: Hameln

Version: LAGA of May 2018

Testing area 1: Sewage sludge

	Subarea / Parameter	Basis / Procedure		Site
		AbfKlärV		
1.1	Sampling and sample preparation	Paragraph 32, Section 3 und 4 AbfKlärV		
a)	Sampling	DIN EN ISO 5667-13 (08.11) and DIN 19698-1 (05.14)	<input checked="" type="checkbox"/>	
b)	Sample preparation	DIN 19747 (07.09)	<input checked="" type="checkbox"/>	

1.2	Heavy metals and chromium VI¹	Paragraph 5, Section 1 No. 1 AbfKlärV		
	Heavy metals			
	Aqua regia digestion	DIN EN 16174 (11.12)	<input checked="" type="checkbox"/>	
		DIN EN 16174 Procedure A (11.12)	<input type="checkbox"/>	

¹ Deviant of part III No. 1 the proof of competence for part 1.2 can be provided without Chromium VI.

		DIN EN 13346 Procedure A (04.01)	<input type="checkbox"/>	
	Arsenic, lead, cadmium, chromium, copper, nickel, zinc, iron (from aqua regia digestion)	DIN EN ISO 11885 (09.09)	<input type="checkbox"/>	
		DIN ISO 11047 (05.03)	<input type="checkbox"/>	
		DIN EN ISO 17294-2 (01.17)	<input type="checkbox"/>	
		DIN EN 16170 (01.17)	<input checked="" type="checkbox"/>	
		DIN EN 16171 (01.17)	<input checked="" type="checkbox"/>	
		CEN/TS 16172; DIN SPEC 91258 (04.13)	<input type="checkbox"/>	
		DIN ISO 22036 (06.09)	<input type="checkbox"/>	
	Thallium (from aqua regia digestion)	DIN EN ISO 11885 (09.09)	<input type="checkbox"/>	
		DIN ISO 11047 (05.03)	<input type="checkbox"/>	
		DIN EN ISO 17294-2 (01.17)	<input type="checkbox"/>	
		DIN 38406-26 (07.97)	<input type="checkbox"/>	
		DIN EN 16170 (01.17)	<input type="checkbox"/>	
		DIN EN 16171 (01.17)	<input checked="" type="checkbox"/>	
		CEN/TS 16172; DIN SPEC 91258 (04.13)	<input type="checkbox"/>	
		DIN ISO 22036 (06.09)	<input type="checkbox"/>	
	Mercury (from aqua regia digestion)	DIN EN ISO 17852 (04.08)	<input type="checkbox"/>	
		DIN EN 16175-1 (12.16)	<input checked="" type="checkbox"/>	
		DIN EN 16175-2 (12.16)	<input type="checkbox"/>	
		DIN EN 16171 (01.17)	<input type="checkbox"/>	
		DIN EN ISO 12846 (08.12)	<input type="checkbox"/>	
	Chromium VI (from alkaline hot extract) ²	DIN EN 16318 (07.16)	<input checked="" type="checkbox"/>	
		DIN EN 15192 (02.07)	<input type="checkbox"/>	
		DIN 10304-3 (11.97)³	<input type="checkbox"/>	
		DIN EN ISO 17294-2 (01.17)⁵	<input type="checkbox"/>	

² The procedures DIN EN 16318 or DIN EN 15192 are to be used for the alkaline hot extract.

³ Instead of post column derivatisation with 1,5-Diphenylcarbazid the determination of Cr (VI) can be carried out after the ion chromatographic separation according to DIN 10304-3 with coupling of ICP-MS detection on the basis of DIN EN ISO 17294-2.

1.3	Adsorbed organically bound halogens	Paragraph 5 Section 1 No. 2 AbfKlärV		
	AOX (from dry residue)	DIN 38414-18 (11.89)	<input checked="" type="checkbox"/>	
		DIN EN 16166 (11.12)	<input type="checkbox"/>	

1.4	Physical parameters, nutrients	Paragraph 5 Section 1 Nos. 3 - 9 AbfKlärV		
	Dry residue	DIN EN 15934 (11.12)	<input checked="" type="checkbox"/>	
		DIN EN 12880 (02.01)	<input type="checkbox"/>	
	Organic substance as loss on ignition (from the dry residue)	DIN EN 15935 (11.12)	<input checked="" type="checkbox"/>	
		DIN EN 12879 (02.01)	<input type="checkbox"/>	
	pH	DIN EN 15933 (11.12)	<input checked="" type="checkbox"/>	
		DIN 38414-5 (07.09)	<input type="checkbox"/>	
	Alkaline substances as CaO	Methods book of the VDLUFA Volume II.2, Method 4.5.1	<input checked="" type="checkbox"/>	
	Ammonium nitrogen (NH ₄ -N)	DIN 38406-5 (10.83)	<input checked="" type="checkbox"/>	
	Total nitrogen (N _{tot})	DIN EN 13342 (01.01)	<input type="checkbox"/>	
		DIN EN 16169 (11.12)	<input checked="" type="checkbox"/>	
		DIN ISO 11261 (05.97)	<input type="checkbox"/>	
	Aqua regia digestion	DIN EN 16174 (11.12)	<input checked="" type="checkbox"/>	
		DIN EN 13346 Procedure A (04.01)	<input type="checkbox"/>	
	Phosphorus (P) (from aqua regia digestion) (Conversion: Phosphorus (P) = 2.291 for phosphorus pentoxide (P ₂ O ₅))	DIN EN ISO 11885 (09.09)	<input type="checkbox"/>	
		DIN EN ISO 6878 (09.04)	<input type="checkbox"/>	
		DIN EN ISO 17294-2 (01.17)	<input type="checkbox"/>	
		DIN EN 16171 (01.17)	<input type="checkbox"/>	
		DIN EN 16170 (01.17)	<input checked="" type="checkbox"/>	

	Persistent organic pollutants	Paragraph 5 Section 2 Nos. 1 – 4 AbfKlärV		
1.5	Polychlorinated biphenyls (PCB)	DIN 38414-20 (01.96)	<input type="checkbox"/>	
		DIN EN 16167 (11.12)	<input checked="" type="checkbox"/>	

1.6	Polychlorinated dibenzodioxins and -furans (PCDD / PCDF) and dioxin-like polychlorinated biphenyls (dl-PCB)	DIN CEN/TS 16190; DIN SPEC 91267 (05.12)	<input type="checkbox"/>	
		DIN 38414-24 (10.00)	<input checked="" type="checkbox"/>	
1.7	Benzo(a)pyrene (B(a)P)	DIN EN 15527 (09.08)	<input type="checkbox"/>	
		DIN 38414-23 (02.02)	<input type="checkbox"/>	
		DIN CEN/TS 16181; DIN SPEC 91243 (12.13)	<input checked="" type="checkbox"/>	
1.8	Polyfluorinated compounds (PFC) with the individual substances perfluorooctanoic acid and perfluorooctanesulfonic acid (PFOA / PFOS)	DIN 38414-14 (08.11)	<input checked="" type="checkbox"/>	

Testing area 2: Soils

	Subyrea / Parameter	Basis / Procedure		Site
		AbfKlärV and BioAbfV		
2.1	Sampling and sample preparation	Paragraph 32 Section 2 AbfKlärV and Paragraph 9 BioAbfV		
a)	Sampling	DIN ISO 10381-1 (08.03) <u>and</u> DIN ISO 10381-4 (04.04)	<input checked="" type="checkbox"/>	
b)	Sample preparation	DIN ISO 19747 (07.09)	<input checked="" type="checkbox"/>	

2.2	Heavy metals	Paragraph 4 Section 1 AbfKlärV Paragraph 9 Section 2 BioAbfV		
	Aqua regia digestion	DIN EN 16174 (11.12)	<input checked="" type="checkbox"/>	
		DIN EN 13657 (01.03)	<input type="checkbox"/>	
	Lead, cadmium, chromium, copper, nickel, zinc (from aqua regia digestion)	DIN ISO 11047 (05.03)	<input type="checkbox"/>	
		DIN EN ISO 17294-2 (01.17)	<input type="checkbox"/>	
		DIN ISO 22036 (06.09)	<input type="checkbox"/>	
		DIN EN 16170 (01.17)	<input checked="" type="checkbox"/>	
		DIN EN 16171 (01.17)	<input type="checkbox"/>	

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		DIN EN ISO 11885 (09.09)	<input type="checkbox"/>	
	Mercury (from aqua regia digestion)	DIN ISO 16772 (06.05)	<input type="checkbox"/>	
		DIN EN 12846 (08.12)* a procedure incorrectly stated by the legislator; properly DIN EN ISO 12846 (08.12)	<input type="checkbox"/>	
		EN 16175-1 (12.16)	<input checked="" type="checkbox"/>	
		EN 16175-2 (12.16)	<input type="checkbox"/>	
		DIN EN 16171 (01.17)	<input type="checkbox"/>	
		DIN EN ISO 17852 (04.08)	<input type="checkbox"/>	

2.3	Physical parameters, phosphate	Paragraph 4 Section 1 AbfKlärV Paragraph 9 Section 2 BioAbfV		
	Phosphate (from CAL/DL-extrakt; P-content to be converted to o-phosphate)	VDLUFA Methods book, Volume I, Method A 6.2.1.1 (6th partial delivery 2012)	<input checked="" type="checkbox"/>	
		VDLUFA Methods book, Volume I, Method A 6.2.1.2 (Basic edition)	<input checked="" type="checkbox"/>	
		DIN EN ISO 10304-1 (07.09)	<input type="checkbox"/>	
		DIN ISO 22036 (06.09)	<input type="checkbox"/>	
	Soil texture (Clay content)	DIN 19682-2 (07.14)	<input checked="" type="checkbox"/>	
		DIN 18123 (04.11)	<input type="checkbox"/>	
	pH	DIN EN 15933 (11.12)	<input type="checkbox"/>	
		ISO 10390 (02.05)	<input type="checkbox"/>	
		VDLUFA Method Manual I A 5.1.1	<input checked="" type="checkbox"/>	
	Dry residue	DIN EN 15934 (11.12)	<input checked="" type="checkbox"/>	
		DIN EN 12880 (02.01)	<input type="checkbox"/>	

	Organic substances	Paragraph 4 Section 2 AbfKlärV		
2.4	Polychlorinated biphenyls (PCB)	DIN ISO 10382 (05.03)	<input type="checkbox"/>	
		DIN EN 16167 (11.12)	<input checked="" type="checkbox"/>	
2.5	Benzo(a)pyrene (B(a)P)	DIN ISO 18287 (05.06)	<input checked="" type="checkbox"/>	

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	DIN CEN TS 16181; DIN SPEC 91243 (12.13)	<input type="checkbox"/>	
	DIN 38414-23 (02.02)	<input type="checkbox"/>	

Testing area 3: Biowaste

	Subarea / Parameter	Basis / Procedure		Site
		BioAbfV		
3.1	Sampling and Sample preparation	Paragraph 4 Section 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)	<input checked="" type="checkbox"/>	
b)	Sample preparation	DIN 19747 (07.09) in conjunction with Annex 3 item 1.3.3	<input checked="" type="checkbox"/>	
		DIN EN 13040 (02.07)	<input type="checkbox"/>	

3.2	Heavy metals	Paragraph 4 Section 5 BioAbfV		
	Aqua regia digestion	DIN EN 13650 (01.02)	<input type="checkbox"/>	
		DIN EN 16174 (11.12)	<input checked="" type="checkbox"/>	
		DIN EN 13657 (01.03)	<input type="checkbox"/>	
		DIN EN 13346 (04.01)	<input type="checkbox"/>	
	Lead (from aqua regia digestion)	DIN 38406- 6 (07.98)	<input type="checkbox"/>	
		DIN ISO 11047 (05.03)	<input type="checkbox"/>	
		DIN EN ISO 11885 (04.98)	<input type="checkbox"/>	
		DIN EN ISO 17294-2 (02.05)	<input type="checkbox"/>	
		DIN EN ISO 11885 (09.09)	<input checked="" type="checkbox"/>	
		DIN EN ISO 22036 (06.09)	<input type="checkbox"/>	
	Cadmium (from aqua regia digestion)	DIN EN ISO 5961 (05.95)	<input type="checkbox"/>	
		DIN ISO 11047 (05.03)	<input type="checkbox"/>	
		DIN EN ISO 11885 (04.98)	<input type="checkbox"/>	
		DIN EN ISO 17294-2 (02.05)	<input type="checkbox"/>	

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		DIN EN ISO 17294-2 (01.17)	<input type="checkbox"/>	
		DIN EN ISO 11885 (09.09)	<input checked="" type="checkbox"/>	
		DIN EN ISO 22036 (06.09)	<input type="checkbox"/>	
Chromium (from aqua regia digestion)		DIN EN 1233 (08.96)	<input type="checkbox"/>	
		DIN ISO 11047 (05.03)	<input type="checkbox"/>	
		DIN EN ISO 11885 (04.98)	<input type="checkbox"/>	
		DIN EN ISO 17294-2 (02.05)	<input type="checkbox"/>	
		DIN EN ISO 17294-2 (01.17)	<input type="checkbox"/>	
		DIN EN ISO 11885 (09.09)	<input checked="" type="checkbox"/>	
		DIN EN ISO 22036 (06.09)	<input type="checkbox"/>	
Copper (from aqua regia digestion)		DIN 38406-7 (09.91)	<input type="checkbox"/>	
		DIN ISO 11047 (05.03)	<input type="checkbox"/>	
		DIN EN ISO 11885 (04.98)	<input type="checkbox"/>	
		DIN EN ISO 17294-2 (02.05)	<input type="checkbox"/>	
		DIN EN ISO 17294-2 (01.17)	<input type="checkbox"/>	
		DIN EN ISO 11885 (09.09)	<input checked="" type="checkbox"/>	
		DIN EN ISO 22036 (06.09)	<input type="checkbox"/>	
Nickel (from aqua regia digestion)		DIN 38406- 11 (09.91)	<input type="checkbox"/>	
		DIN ISO 11047 (05.03)	<input type="checkbox"/>	
		DIN EN ISO 11885 (04.98)	<input type="checkbox"/>	
		DIN EN ISO 17294- 2 (02.05)	<input type="checkbox"/>	
		DIN EN ISO 17294- 2 (01.17)	<input type="checkbox"/>	
		DIN EN ISO 11885 (09.09)	<input checked="" type="checkbox"/>	
		DIN EN ISO 22036 (06.09)	<input type="checkbox"/>	
Mercury (from aqua regia digestion)		DIN EN 1483 (07.07)	<input checked="" type="checkbox"/>	
		DIN EN 12338 (10.98)	<input type="checkbox"/>	
		DIN EN ISO 12846 (08.12)	<input type="checkbox"/>	
Zinc (from aqua regia digestion)		DIN 38406- 8 (10.04)	<input type="checkbox"/>	
		DIN ISO 11047 (05.03)	<input type="checkbox"/>	
		DIN EN ISO 11885 (04.98)	<input type="checkbox"/>	
		DIN EN ISO 17294- 2 (02.05)	<input type="checkbox"/>	

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	DIN EN ISO 17294- 2 (01.17)	<input type="checkbox"/>	
	DIN EN ISO 11885 (09.09)	<input checked="" type="checkbox"/>	
	DIN EN ISO 22036 (06.09)	<input type="checkbox"/>	

Teilbereiche 3.3 bis 3.5 Not documented

Testing area 4: Used oil, insulating liquid

Not documented

Testing area 5: Waste for deposition

	Subarea/ Parameter	Basis/ Procedure		Site
		Paragraph 6 Section 2, Paragraph 8 Section 1, 3 and 5 DepV		
5.1	Sampling	LAGA PN 98 (12.01)	<input checked="" type="checkbox"/>	

5.2	Determination of the total content in the solid			
	Sample preparation	DIN 19747 (07.09)	<input checked="" type="checkbox"/>	
	Digestion method (aqua regia)	DIN EN 13657 (01.03)	<input checked="" type="checkbox"/>	
	Loss on ignition	DIN EN 15169 (05.07)	<input checked="" type="checkbox"/>	
	TOC (Total organic carbon)	DIN EN 13137 (12.01)	<input checked="" type="checkbox"/>	
	BTEX (benzene and derivatives)	DIN 38407-F9 (05.91) Manual Contaminated Sites HLUG, Volume 7, Analytical Techniques, Part 4 (2000)	<input checked="" type="checkbox"/>	
		DIN EN ISO 22155 (07.16)	<input type="checkbox"/>	
	PCB (polychlorinated biphenyls)	DIN EN 15308 (05.08)	<input checked="" type="checkbox"/>	
	Mineral oil hydrocarbons	DIN EN 14039 (01.05) in conjunction with LAGA KW/04 (12.09)	<input checked="" type="checkbox"/>	
	PAH (Polycyclic aromatic hydrocarbons)	DIN ISO 18287 (05.06)	<input checked="" type="checkbox"/>	
	Density	DIN 18125-2 (03.11)	<input checked="" type="checkbox"/>	
	Calorific value	DIN EN 15170 (05.09)	<input type="checkbox"/>	

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	Cadmium, chromium, copper, nickel, lead and zinc	DIN ISO 11047 (05.03)	<input type="checkbox"/>	
		DIN EN ISO 11885 (09.09)	<input checked="" type="checkbox"/>	
		DIN ISO 22036 (06.09)	<input type="checkbox"/>	
	Mercury	DIN EN 12846 (08.12)* a procedure incorrectly stated by the legislator; properly DIN EN ISO 12846 (08.12)	<input checked="" type="checkbox"/>	
		DIN EN ISO 17852 (04.08)	<input type="checkbox"/>	
	Extractable lipophilic substances	LAGA KW/04 (12.09)	<input checked="" type="checkbox"/>	

5.3	Determination of the contents in the eluate			
	Preparation of the eluate at a liquid to solid ratio of 10/1	DIN EN 12457-4 (01.03)	<input checked="" type="checkbox"/>	
	Preparation of eluate with constant pH 4 and 11/ Acid neutralizing capacity	LAGA-Richtlinie EW 98 (2002)	<input type="checkbox"/>	
	Up-flow percolation test	DIN CEN/TS 14405 (09.04)	<input type="checkbox"/>	
		DIN 19528 (01.09)	<input type="checkbox"/>	
	pH of the eluate	DIN 38404-5 (07.09)	<input checked="" type="checkbox"/>	
	DOC	DIN EN 1484 (08.97)	<input checked="" type="checkbox"/>	
	DOC at pH between 7,5 and 8	LAGA-Richtlinie EW 98 p (2002)	<input type="checkbox"/>	
	Phenols	DIN 38409-16 (06.84)	<input checked="" type="checkbox"/>	
		DIN EN ISO 14402 (12.99)	<input type="checkbox"/>	
		DIN 38407- 27 (10.12)	<input type="checkbox"/>	
	Arsenic	DIN EN ISO 11969 (11.96)	<input type="checkbox"/>	
		DIN EN ISO 11885 (09.09)	<input type="checkbox"/>	
		DIN ISO 22036 (06.09)	<input type="checkbox"/>	
		DIN EN ISO 15586 (02.04)	<input type="checkbox"/>	
		DIN EN ISO 17294-2 (02.05)	<input checked="" type="checkbox"/>	
		DIN EN ISO 17294-2 (01.17)	<input type="checkbox"/>	
	Lead, cadmium, copper, nickel, zinc, chromium	DIN EN ISO 15586 (02.04)	<input type="checkbox"/>	
		DIN EN ISO 17294-2 (02.05)	<input checked="" type="checkbox"/>	
		DIN EN ISO 11885 (09.09)	<input checked="" type="checkbox"/>	
		DIN ISO 22036 (06.09)	<input type="checkbox"/>	

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		DIN EN ISO 17294-2 (01.17)	<input type="checkbox"/>	
	Mercury	DIN EN ISO 12846 (08.12)	<input checked="" type="checkbox"/>	
		DIN EN ISO 17852 (04.08)	<input type="checkbox"/>	
	Barium, molybdenum, selenium	DIN ISO 22036 (06.09)	<input type="checkbox"/>	
		DIN EN ISO 11885 (09.09)	<input checked="" type="checkbox"/>	
		DIN EN ISO 17294-2 (02.05)	<input checked="" type="checkbox"/>	
		DIN EN ISO 17294-2 (01.17)	<input type="checkbox"/>	
	Antimony	DIN ISO 22036 (06.09)	<input type="checkbox"/>	
		DIN EN ISO 11885 (09.09)	<input type="checkbox"/>	
		DIN EN ISO 15586 (02.04)	<input type="checkbox"/>	
		DIN 38405- 32 (05.00)	<input type="checkbox"/>	
		DIN EN ISO 17294- 2 (02.05)	<input checked="" type="checkbox"/>	
		DIN EN ISO 17294-2 (01.17)	<input type="checkbox"/>	
	Total dissolved solids (TDS)	DIN EN 15216 (01.08)	<input type="checkbox"/>	
		DIN 38409-1 (01.87)	<input checked="" type="checkbox"/>	
		DIN 38409-2 (03.87)	<input type="checkbox"/>	
	Conductivity of the eluate	DIN EN 27888 (11.93)	<input checked="" type="checkbox"/>	
	Determination of dry residue	DIN EN 14346 (03.07)	<input checked="" type="checkbox"/>	
	Chloride	DIN EN ISO 10304-1 (07.09)	<input checked="" type="checkbox"/>	
		DIN 38405- 1 (12.85)	<input type="checkbox"/>	
		DIN EN ISO 15682 (01.02)	<input type="checkbox"/>	
	Sulfate	DIN EN ISO 10304-1 (07.09)	<input checked="" type="checkbox"/>	
		DIN 38405-5 (01.85)	<input type="checkbox"/>	
	Cyanide, easily liberatable	DIN 38405-13 (04.11)	<input checked="" type="checkbox"/>	
		in sulphide-containing wastes:		
		DIN ISO 17380 (05.06)	<input type="checkbox"/>	
		DIN EN ISO 14403- 1 (10.12)	<input type="checkbox"/>	
	Fluoride	DIN 38405-4 (07.85)	<input checked="" type="checkbox"/>	
		DIN EN ISO 10304- 1 (07.09)	<input type="checkbox"/>	

Subarea 5.4 Not documented

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Testing area 6: Waste wood

Not documented

4.6 Tests of agricultural and horticultural soils and fertiliser, including secondary raw material fertilisers

All methods described in the technical modules are also accredited for a corresponding matrix outside of the technical module and are not listed separately here.

4.6.1 Sampling

DIN ISO 10381-2 2003-08	Soil quality – Sampling – Part 2: Guidance on sampling techniques	IfB HM IfD HM
DIN ISO 10381-3 2002-08	Soil quality – Sampling – Part 3: Guidance on safety	IfB HM IfD HM
DIN ISO 10381-4 2004-04	Soil quality – Sampling – Part 4: Guidance on the procedure for investigation of natural, near-natural and cultivated sites	IfB HM IfD HM
DIN 19671-1 1964-05	Soil drilling apparatus for drawing soil samples in agricultural engineering; groove borers, tube borers	IfB HM IfD HM
BioAbfV Annex 3 No. 1.1 1998	Test of treated and untreated biowaste - Sampling	IfB HM IfD HM
VDLUFA I, A 1.0 1991	General guideline for taking soil samples	IfB HM IfD HM
VDLUFA I, A 1.2.1 2007	Sampling for the test of nutrients accessible to plants in agrarian and horticultural soils <i>(Modification: also for deeper layers (5 m))</i>	IfB HM IfD HM
VDLUFA I, A 1.2.2 1997	Sampling for the N _{min} method	IfB HM IfD HM

4.6.2 Sample preparation

DIN EN 13657 2003-01	Characterization of waste - Digestion for subsequent determination of aqua regia soluble portion of elements in waste	IfB HM IfD HM
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DIN EN 16174 2012-11	Sludge, treated biowaste and soil - Digestion of aqua regia soluble fractions of elements	IfB HM IfD HM
DIN 19682-2 2014-07	Soil quality - Field tests - Part 2: Determination of soil texture	IfB HM IfD HM
VDLUFA I, D 2.1 1997	Determination of the soil type of the fine soil with the finger test	IfB HM IfD HM
VDLUFA II.1, 4.1.3 1995	Determination of citric acid-soluble phosphate - Extraction	IfB HM IfD HM
VDLUFA II.1, 4.1.4 1995	Determination of water-soluble and neutral ammonium citrate-soluble phosphate following FRESENIUS-NEUBAUER extraction	IfB HM IfD HM
VDLUFA II.1, 4.1.7 1995	Extraction of water-soluble phosphate - Extraction	IfB HM IfD HM
VDLUFA II.1, 5.1.1.1 1995	Determination of water-soluble potassium in mineral fertilisers - Preparation of the analytical solution	IfB HM IfD HM
VDLUFA II.1, 6.1.1 2004	Determination of calcium which is soluble in mineral acid - Preparation of the analytical solution	IfB HM IfD HM
VDLUFA II.1, 6.1.3 1999	Determination of water-soluble calcium in mineral fertilisers - Preparation of the analytical solution	IfB HM IfD HM
VDLUFA VII, 2.1.3 2011	Microwave-heated pressure digestion	IfB HM IfD HM
EU 3.1.3 VO 2003/2003 EU	Extraction of phosphorus soluble in 2% citric acid (20 g per litre)	IfB HM IfD HM
EU 3.1.4 VO 2003/2003 EU	Extraction of phosphorus which is soluble in neutral ammonium citrate	IfB HM IfD HM
EU 3.1.6 VO 2003/2003 EU	Extraction of water-soluble phosphorus	IfB HM IfD HM
EU 4.1 VO 2003/2003 EU	Determination of water-soluble potassium	IfB HM IfD HM

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EU 8.3 VO 2003/2003 EU	Extraction of water-soluble calcium, magnesium, sodium and sulphur (in the form of sulphates)	IfB HM IfD HM
EU 9.2 VO 2003/2003 EU	Extraction of water-soluble micro-nutrients (here: <i>boron, cobalt, copper, iron, manganese, molybdenum and zinc</i>)	IfB HM IfD HM

4.6.3 Gravimetric methods

DIN ISO 11465 1996-12	Soil quality – Determination of dry matter and water content on a mass basis – Gravimetric method 6 <i>(standard withdrawn)</i>	IfB HM IfD HM
DIN EN 12879 2001-02	Characterization of sludges - Determination of the loss on ignition of dry mass <i>(standard withdrawn)</i>	IfB HM IfD HM
DIN EN 12880 2001-02	Characterization of sludges - Determination of dry residue and water content <i>(standard withdrawn)</i>	IfB HM IfD HM
DIN 19684-3 2000-08	Methods of soil investigations for agricultural water engineering – Chemical laboratory tests – Part 3: Determination of the loss on ignition and the residue of soil after ignition <i>(standard withdrawn)</i>	IfB HM IfD HM
DIN 38414-S 22 2018-10	German standard methods for the examination of water, waste water and sludge - Sludge and sediments (group S) - Part 22: Determination of dry residue by freezing and preparation of the freeze dried mass of sludge (S 22)	IfB HM IfD HM
BGK Methods Manual Chapter II C 1 2015-12	Content of foreign substances	IfB HM IfD HM
BGK Methods Manual Chapter II C 2 2013-05	Content of stone	IfB HM IfD HM
BGK Methods Manual Chapter II C 3 2015-12	Degree of impurity (qualitative as sum of foreign substance areas)	IfB HM IfD HM

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VDLUFA II.1, 6.5.1 2008	Determination of screening stage of fertilisers (dry method)	IfB HM IfD HM
VDLUFA II.1, 15.2.1 2014	Determination of dry matter	IfB HM IfD HM

4.6.4 Volumetric, titrimetric and potentiometric methods

DIN ISO 11261 1997-05	Soil quality - Determination of total nitrogen - Modified Kjeldahl method <i>(standard withdrawn)</i>	IfB HM IfD HM
VDLUFA I, A 10.1.1 1991	Determination of salt content in soils, garden soils and substrates	IfB HM IfD HM
VDLUFA I, A 13.4.1 1991	Determination of salt content in horticultural soils, garden soils and substrates in extract with water	IfB HM IfD HM
VDLUFA II, 3.2.1 1995	Determination of ammonia nitrogen - Distillation with caustic soda	IfB HM IfD HM
VDLUFA II, 6.3 1995	Determination of alkaline components in lime fertilisers	IfB HM IfD HM
VDLUFA II, 6.4 1995	Determination of reactivity of carbonated fertiliser limes	IfB HM IfD HM
VDLUFA VII, 2.2.2.11 2017	Determination of fluorine in plants and animal feedstuff by the ion-selective electrode method	IfB HM IfD HM

4.6.5 Spectroscopic methods (UV, VIS, AAS, ICP)

DIN EN ISO 12846 (E 12) 2012-08	Water quality – Determination of mercury – Method using atomic absorption spectrometry (AAS) with and without enrichment	IfB HM IfD HM
DIN EN 1483 (E 12) 2007-07	Water quality – Determination of mercury – Method using atomic absorption spectrometry <i>(standard withdrawn)</i>	IfB HM IfD HM

DIN EN ISO 11885 (E 22) 2009-09	Water quality – Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES) (Modification: <i>Determination from aqua regia digestion and determination from water soluble, citric acid soluble, neutral ammonium citrate soluble and HCl-soluble extracts</i>)	IfB HM IfD HM
DIN EN ISO 11732 (E 23) 2005-05	Water quality – Determination of ammonium nitrogen – Method by flow analysis (CFA and FIA) and spectrometric detection (Modification: <i>Matrix test of agricultural and horticultural soils and fertilisers, including secondary raw material fertilisers</i>)	IfB HM IfD HM
DIN EN ISO 17294-2 (E 29) 2005-02	Water quality – Application of inductively coupled plasma mass spectrometry (ICP-MS) – Part 2: Determination of 62 elements (<i>standard withdrawn</i>) (Modification: <i>Determination from aqua regia digestion and determination from water soluble extracts</i>)	IfB HM IfD HM
DIN EN 16170 2017-01	Sludge, treated biowaste and soil - Determination of elements using inductively coupled plasma optical emission spectrometry (ICP-OES)	IfB HM IfD HM
DIN EN 16171 2017-01	Sludge, treated biowaste and soil - Determination of elements using inductively coupled plasma mass spectrometry (ICP-MS)	IfB HM IfD HM
DIN 38405-D 23 1994-10	German standard methods for the examination of water, waste water and sludge - Anions (Group D) - Part 23: Determination of selenium by atomic absorption spectrometry (D 23) (Modification: <i>Determination from aqua regia digestion</i>)	IfB HM IfD HM
VDLUFA I, A 6.1.4.1 2002	Determination of mineral nitrogen (nitrate and ammonia) in soil profiles (N_{min} laboratory method)	IfB HM IfD HM
VDLUFA I, A 6.2.1.1 2012	Determination of phosphorus and potassium in the calcium acetate lactate (CAL) extract	IfB HM IfD HM
VDLUFA I, A 6.2.1.2 1991	Determination of phosphorus and potassium in the double lactate (DL) extract	IfB HM IfD HM

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VDLUFA I, A 6.2.4.1 1991	Determination of plant-available magnesium in the calcium chloride extract	IfB HM IfD HM
VDLUFA I, A 6.3.1 2016	Determination of soluble sulphur in soil profiles (S_{\min})	IfB HM IfD HM
VDLUFA I, A 6.4.1 2002	Determination of magnesium, sodium and the trace elements copper, manganese, zinc and boron in calcium chloride/DTPA extract	IfB HM IfD HM

4.6.6 Chromatographic methods (GC, HPLC)

DIN ISO 16703 2005-12	Soil quality – Determination of content of hydrocarbon in the range C10 to C40 by gas chromatography <i>(standard withdrawn)</i>	IfB HM IfD HM
DIN EN ISO 22155 2013-05	Soil quality – Gas chromatographic quantitative determination of volatile aromatic and halogenated hydrocarbons and selected ethers – Static headspace method <i>(standard withdrawn)</i>	IfB HM IfD HM
DIN 38414-14 2011-08	German standard methods for the examination of water, waste water and sludge - Sludge and sediments (group S) - Part 14: Determination of selected polyfluorinated compounds (PFC) in sludge, compost and soil - Method using high performance liquid chromatography and mass spectrometric detection (HPLC-MS/MS) (S 14) <i>(here: also for fertilisers)</i>	IfB HM IfD HM
ASU L 00.00-115 2018-10	Tests of foodstuff - Multimethod for the determination of pesticide residues using GC- and LC-based analysis following acetonitrile extraction/partitioning and clean-up by dispersive SPE in foods of plant origin - Modular QuEChERS-method (Takeover of the standard of the same name DIN EN 15662, July 2018) <i>(Modification: here in soils and fertilisers)</i>	IfB HM IfD HM
VDLUFA II.1, 3.9.2 1995	Determination of biuret in urea - HPLC method <i>(Modification: here also for urea in fertilisers and fertiliser-like matrices)</i>	IfB HM IfD HM

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VDLUFA VII, 3.3.2.1 2011	Determination of selected individual components of polychlorinated biphenyls (PCB) and chlorinated hydrocarbons (CHC) in soils, sewage sludge and composts <i>(Modification: also for dust)</i>	IfB HM IfD HM
VDLUFA VII, 3.3.2.3 2011	Determination of polychlorinated dibenzo-p-dioxines (PCDD) and polychlorinated dibenzofurans (PCDF) and of selected coplanar polychlorinated biphenyls (non-ortho PCB) in soils, sewage sludge and composts	IfB HM IfD HM
VDLUFA VII, 3.3.2.6 2011	Determination of perfluorooctane carboxylic acid (PFOA) and perfluorooctane sulphonic acid (PFOS) as lead substances for perfluorinated chemicals (PFC) in sewage sludge and compost by liquid chromatography with mass spectrometric detection	IfB HM IfD HM
VDLUFA VII, 3.3.6.1 2011	Determination of phenols in soils, sewage sludges, composts, plant material as well as water and wastewater by gas chromatography with mass-spectrometric detection <i>(Modification: also for consumer goods made of plant material)</i>	IfB HM IfD HM
LUFA Nord-West AA 4/1C-043 2018-03	Determination of diethylhexylphthalate in sewage sludge and soils by GC-MSD measurement	IfB HM IfD HM
LUFA Nord-West AA 4/1C-052 2017-09	Analysis of residues of high polar pesticides in solid matrix	IfB HM IfD HM
LUFA Nord-West AA 4/1C-059 2018-04	Determination of herbicides from the group of pyridine carboxylic acids (aminopyralid/clopyralid/picloram/fluroxypyr)	IfB HM IfD HM

4.6.7 Further methods

DIN ISO 10694 1996-08	Soil quality - Determination of organic and total carbon after dry combustion (elementary analysis) <i>(standard withdrawn)</i>	IfB HM IfD HM
DIN EN 16168 2012-11	Sludge, treated biowaste and soil - Determination of total nitrogen using dry combustion method	IfB HM IfD HM

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VDLUFA I, A 4.1.3.2 Direct determination of organic carbon by combustion at 550 ° C and gas analysis IfB HM
2016 IfD HM

VDLUFA II.1, 3.5.2.7 Determination of total nitrogen – Combustion method IfB HM
1995 IfD HM

4.7 Tests of selected animal feedstuffs and foodstuffs, harvested crops and plants

4.7.1 Sample preparation

VDLUFA VII, 2.1.3 Microwave-heated pressure digestion IfB HM
2011 IfD HM

4.7.2 Gravimetric tests of harvest crops and plants

VDLUFA III, 3.1 Determination of moisture IfB HM
1976 IfD HM

4.7.3 Spectroscopic methods (AAS, ICP)

DIN EN ISO 11885 (E 22) Water quality – Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES)
2009-09 (Modification: *Determination for microwave pressure digestion*)
(here for: *animal feedstuffs and foodstuffs, harvested crops and plants*)
(Restriction: *only Cu, Zn, Na, Fe, Al, Ca, Mg, P, K, S, Mn and B*) IfB HM
IfD HM

DIN EN ISO 12846 (E 12) Water quality – Determination of mercury – Method using atomic absorption spectrometry (AAS) with and without enrichment
2012-08 (Modification: *Determination for microwave pressure digestion*)
(here for: *animal feedstuffs and foodstuffs, harvested crops and plants*) IfB HM
IfD HM

DIN EN ISO 17294-2 (E 29) 2005-02	Water quality – Application of inductively coupled plasma mass spectrometry (ICP-MS) – Part 2: Determination of 62 elements <i>(standard withdrawn)</i> (Modification: <i>Determination for microwave pressure digestion</i>) (here for: <i>animal feedstuffs and foodstuffs, harvested crops and plants</i>) (Restriction: <i>only Pb, Cd, As, Cr, Ni, U and Sn</i>)	IfB HM IfD HM
DIN EN 15111 2007-06	Foodstuffs - Determination of trace elements - Determination of iodine by ICP-MS (inductively coupled plasma mass spectrometry)	IfB HM IfD HM
DIN 38405-D 23 1994-10	German standard methods for the examination of water, waste water and sludge - Anions (Group D) - Part 23: Determination of selenium by atomic absorption spectrometry (D 23) (Modification for foodstuffs: <i>Determination for microwave pressure digestion</i>)	IfB HM IfD HM
VDLUFA VII, 2.2.2.3 2011	Determination of extractable iodine content in animal feedstuffs by inductively coupled plasma with mass-spectrometric detection (ICP-MS)	IfB HM IfD HM

4.7.4 Determination of residues and contaminants in animal feedstuffs and foodstuffs by liquid chromatography with mass-selective detectors (MS-, MS/MS-detector) *

ASU L 00.00-115 2018-10	Tests of foodstuff - Multimethod for the determination of pesticide residues using GC- and LC-based analysis following acetonitrile extraction/partitioning and clean-up by dispersive SPE in foods of plant origin - Modular QuEChERS-method (Takeover of the standard of the same name DIN EN 15662, July 2018)	IfB HM IfD HM
VDLUFA VII, 3.3.2.5 2011	Determination of perfluorooctane carboxylic acid (PFOA) and perfluorooctane sulphonic acid (PFOS) as lead substances for perfluorinated chemicals (PFC) in sewage sludge and compost by liquid chromatography with mass spectrometric detection	IfB HM IfD HM

LUFA Nord-West Determination of mycotoxins in foodstuffs and animal feedstuffs by LC-MS/MS IfB HM
 AA 4/1C-049 IfD HM
 2018-04

LUFA Nord-West Analysis of residues of high polar pesticides in solid matrix (here: *animal feedstuffs and foodstuffs / QuPPe-Method*) IfB HM
 AA 4/1C-052 IfD HM
 2017-09

LUFA Nord-West Determination of herbicides from the group of pyridine carboxylic acids (aminopyralid/clopyrali/picloram/fluroxypyr) IfB HM
 AA 4/1C-059 IfD HM
 2018-04

4.7.5 Determination of residues and contaminants in animal feedstuffs and foodstuffs by gas chromatography with mass-selective detectors (MS-, MS/MS-detector) *

ASU L 00.00-34 Tests of foodstuff - Modular multi-method for the determination of plant protection product residues in foodstuffs (extended revision of DFG method S19) IfB HM
 2010-09 IfD HM

ASU L 00.00-115 Tests of foodstuff - Multimethod for the determination of pesticide residues using GC- and LC-based analysis following acetonitrile extraction/partitioning and clean-up by dispersive SPE in foods of plant origin - Modular QuEChERS-method (Takeover of the standard of the same name DIN EN 15662, July 2018) IfB HM
 2018-10 IfD HM

VDLUFA VII, 3.3.2.4 Determination of polychlorinated dibenzo-p-dioxines (PCDD) and polychlorinated dibenzofurans (PCDF) and selected coplanar polychlorinated biphenyls (non-ortho PCB) in animal feedstuffs IfB HM
 2011 IfD HM

VDLUFA VII, 3.3.3.2 Determination of polycyclic aromatic hydrocarbons (PAH) in plant material IfB HM
 2011 IfD HM

4.7.6 Determination of residues and contaminants in animal feedstuffs and foodstuffs by gas chromatography with conventional detectors (ECD-detector) *

VDLUFA VII, 3.3.2.2 Determination of chlorinated hydrocarbons (CHC), selected individual components of the polychlorinated biphenyls (PCB) and toxaphenes in feedstuffs by means of capillary gas chromatography (*also applies to foodstuffs*) IfB HM
 2016 IfD HM

4.7.7 Photometric tests in foodstuffs, animal feedstuffs and consumer goods

ASU L 00.00-49/1 1999-11	Tests of foodstuffs - Low-fat foodstuffs – Determination of dithiocarbamate and thiouramdisulphide residues - Part 1: Spectrophotometric method	IfB HM IfD HM
ASU L 26.00-2 2001-07	Test of foodstuffs - Continuous flow method for the determination of nitrate content in vegetable products according to cadmium reduction	IfB HM IfD HM
VDLUFA III, 14.15.1 1993	Determination of formaldehyde (Modification: <i>also for consumer goods</i>)	IfB HM IfD HM

4.8 Variety diagnostics of agricultural crops by electrophoresis **

LUFA Nord-West AA 4/2C-001 2015-01	Preparation of reference pressed juices for potato electrophoresis	IfD HM
LUFA Nord-West AA 4/2C-002 2015-01	Variety determination of potatoes by electrophoresis of potato proteins	IfD HM
LUFA Nord-West AA 4/2C-003 2010-01	Variety determination of wheat by electrophoresis of seed proteins	IfD HM
LUFA Nord-West AA 4/2C-004 2010-01	Variety determination of barley by electrophoresis of seed proteins	IfD HM
LUFA Nord-West AA 4/2C-005 2007-10	Variety determination of oat by electrophoresis of seed proteins	IfD HM
LUFA Nord-West AA 4/2C-006 2010-01	Variety determination of triticale by electrophoresis of seed proteins	IfD HM

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4.9 Tests of harmful airborne substances in fields of activity not regulated by immission control law

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 (here: <i>only chloride analysis</i>)	IfB HM IfD HM
DIN EN ISO 11885 (E 22) 2009-09	Water quality – Determination of selected elements by inductively coupled plasma atomic emission spectroscopy (here: <i>only sodium, potassium, magnesium and calcium analysis</i>)	IfB HM IfD HM
VDI 2267, sheet 14 2003-12	Identification of particulate substances in ambient air - Measurement of the mass concentrations of Al, As, Ca, Cd, Co, Cr, Cu, Fe, K, Mg, Mn, Na, Ni, Pb, V and Zn as components of dust precipitation by optical emission spectroscopy (ICP OES) (additionally: thallium with ICP-MS)	IfB HM IfD HM (only analysis)

The methods described in **1.5** correspond to the requirements of the "special proof of competence in the area of immission control" ("Module Immission Control") in the version of 15th September, 2011.

Competence in the testing and technical task areas
 Group I. Nr. 1: G, P, O and Group IV: O
 subject to immission control legislation is hereby confirmed.

For the module IMMISSION CONTROL the following persons are entitled to sign test reports:

1) Technically responsible:	Areas:
Lars Broer, Certified environmental engineer	Group I Nr. 1: G, P, O Group IV: O
Deputy representatives ad 1):	Areas:
Thorsten Becker, Graduate engineer – environmental technology (university of applied sciences)	Group I Nr. 1: G, P, O
Ralf Künnemann, Graduate landscape ecologist	Group IV: O

The following persons are entitled to sign the test reports of **all** testing areas described for the respective site (exemplary mention of the persons responsible for the respective entire institute):

Site 1, IfF- Oldenburg, Jägerstraße 23 - 27

Dr. rer. nat. Michael Egert	Graduate biologist
Dr. rer. nat. Hartwig Wellmann	Graduate chemist

Site 1, IfB- Oldenburg, Jägerstraße 23 - 27

Dr. rer. nat. Manfred Bischoff	Graduate chemist
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Site 2, IfT- Oldenburg, Ammerländer Heerstraße 123

Dr. med. vet. Katrin Beckmann	Veterinarian
Dr. med. vet. Babett Ahrens-Flegel	Veterinarian

Site 3, IfL - Oldenburg, Ammerländer Heerstraße 115-117

Dr.-Ing. Helmut Steinkamp	Graduate engineer
Dr. rer. nat. Stefan Kroll	Food analyst

Site 4, IfB - Hameln, Finkenborner Weg 1a

Dr. rer. nat. Helmut Appuhn	Graduate chemist
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Site 4, IfD - Hameln, Finkenborner Weg 1a

Dr. rer. nat. Helmut Appuhn	Graduate chemist
Dr. rer. nat. Andreas Hoffmann	Graduate chemist

Abbreviation used:

AbfKlärV	Klärschlamm-Verordnung (Sewage Sludge Ordinance)
ADPI	American Dairy Products Institute
AOAC	Association of Official Analytical Chemists
AOCS	Official and tentative methods of the American Oil Chemists Society
AQS	Analytische Qualitätssicherung Baden-Württemberg
ASU	Amtliche Sammlung von Untersuchungen nach § 64 LFGB (official collection of tests acc. to Article 64 of the LFGB)

- Translation -

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BAM	Bundesanstalt für Materialforschung und -prüfung (Federal Institute for Materials Research and Testing)
BGBI	Bundesgesetzblatt (Federal Law Gazette)
BGK	Bundesgütegemeinschaft Kompost e. V. (Federal Quality Association for Compost)
BGR	Bundesanstalt für Geowissenschaften und Rohstoffe (Federal Institute for Geosciences and Natural Resources)
BLE	Bundesanstalt für Landwirtschaft und Ernährung (Federal Office for Agriculture and Food)
BMU	Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (Federal Ministry for Environment, Nature Conservation and Nuclear Safety)
DAB	Deutsches Arzneibuch (German Pharmacopoeia)
DEV	Deutsche Einheitsverfahren zur Wasser-, Abwasser- und Schlammuntersuchung (German standard methods for the test of water, waste water and sewage sludge)
DFG	Deutsche Forschungsgemeinschaft (German Research Foundation)
DGF	Deutsche Gesellschaft für Fettwissenschaft e. V. (German Society of Fats Science)
DIN	Deutsches Institut für Normung e.V (German Institute for Standardization)
DLG	DLG-Prüfbestimmung für Milch und Milchprodukte einschließlich Speiseeis; Deutsche Landwirtschafts-Gesellschaft e. V. Frankfurt/Main; in der jeweiligen gültigen Fassung (Testing specifications for milk and milk products, including ice cream, of the German Agricultural Association, Frankfurt am Main, in the currently valid version)
DVWG	Deutscher Verein des Gas- und Wasserfaches e. V. (German Technical and Scientific Association for Gas and Water)
DVWK	Deutscher Verband für Wasserwirtschaft und Kulturbau e. V. (German Association for Water, Wastewater and Waste (ATV-DVWK))
EG	Europäische Gemeinschaft (European Community)
EN	Europäische Norm (European standard)
EPA	Environmental Protection Agency, USA
EWG	Europäische Wirtschaftsgemeinschaft (European Economic Community)
FLI	Friedrich-Loeffler-Institut (Friedrich Loeffler Institute)
IAG	Internationale Arbeitsgemeinschaft (International Association)
IDF	International Dairy Federation
IMV	Internationaler Milchwirtschaftsverband (International Dairy Farming Association)
ISO	International Organization for Standardization
ISTA	International Seed Testing Association

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KTBL	Kuratorium für Technik und Bauwesen in der Landwirtschaft (Advisory Board for Agricultural Technology and Engineering)
LABO	Länderarbeitsgemeinschaft Boden (the German Working Group on Soil Issues of the Federal States and the Federal Government represented by the Federal Environment Ministry))
LAGA	Länderarbeitsgemeinschaft Abfall (the German Working Group on waste issues of the Federal States and the Federal Government represented by the Federal Environment Ministry)
LAWA	Länderarbeitsgemeinschaft Wasser (the German Working Group on water issues of the Federal States and the Federal Government represented by the Federal Environment Ministry)
LFGB	Lebensmittel- und Futtermittel-Gesetzbuch (Foodstuff and Animal Feed Code)
LUA-NRW	Landesumweltamt Nordrhein-Westfalen(Federal Environmental Agency Nordrhein-Westfalen)
LUFA Nord-West AA...	In-house methods of the LUFA Nord-West
OFD H	Oberfinanzdirektion Hannover (Regional Finance Office Hannover)
RIA	Radioimmunoassay
TGL	Technische Güter- und Lieferbedingungen (Technical quality and delivery)
TS	Technical Specification
TrinkwV	Trinkwasserverordnung (Drinking Water Ordinance)
VDI	Verein Deutscher Ingenieure (Association of German Engineers)
VDLUFA	Verband Deutscher Landwirtschaftlicher Untersuchungs- und Forschungsanstalten (Association of German Agricultural Analytic and Research Institutes)
VDLUFA I	VDLUFA Methodenbuch Band I, Die Untersuchung von Böden (VDLUFA Methods Manual, Vol. I – Tests of soils)
VDLUFA II	VDLUFA Methodenbuch Band II, Die Untersuchung von Düngemitteln (VDLUFA Methods Manual, Vol. II – Tests of fertilisers)
VDLUFA III	VDLUFA Methodenbuch Band III, Die chemische Untersuchung von Futtermitteln (VDLUFA Methods Manual, Vol. III – Chemical tests of animal feedstuffs)
VDLUFA VI	VDLUFA Methodenbuch Band VI, Chemische, physikalische und mikrobiologische Untersuchungsverfahren für Milch, Milchprodukte und Molkereihilfsstoffe (VDLUFA Methods Manual, Vol. VI – Chemical, physical and microbiological methods of test for milk, milk products and dairy excipients)

- Translation -



Annex to the accreditation certificate D-PL-14165-01-00

VDLUFA VII

VDLUFA Methodenbuch Band VII, Umweltanalytik
(VDLUFA Methods Manual, Vol. VII – Environmental analytical tests)

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