Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-20469-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: **08.12.2022**

Date of issue: 08.12.2022

Holder of accreditation certificate:

muva kempten GmbH
Ignaz-Kiechle-Straße 20-22, 87437 Kempten

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and confirm generally with the principles of DIN EN ISO 9001.

physical and physico-chemical, sensory, microbiological analysis of water (drinking water, waste water, surface water, process water, raw and groundwater, swimming and bathing pool water, and water from small bathing ponds);
physical, physico-chemical, chemical, immunological, and sensory analysis of foodstuffs;
microbiological and molecular biological examinations of foodstuffs and animal feed,
dairy auxiliary materials, fitment and utensils along the food chain, products of primary production, environmental samples from the food and feed sector and;
sampling of milk and dairy products, surfaces, liquids, and cheese smear;
determination of radioactivity in foodstuffs, animal feed and waste water;
chemical, microbiological, and sensory examinations of food contact materials and articles;
microbiological and selected chemical analysis according to the German Drinking Water Ordinance, sampling of raw and drinking water;
sampling and microbiological analysis of industrial water according to §3 paragraph 8 42. BImSchV;
specialist module water

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

Content

1 Examination of water (drinking water, waste water, surface water, process water, raw and ground water, swimming and bathing pool water, and water from small bathing ponds)

1.1 Sampling

DIN EN ISO 5667-1 (A 4) 2007-04	Water quality - Sampling - Part 1: Guidance on the design of sampling programmes and sampling techniques
DIN EN ISO 5667-3 (A 21) 2019-07	Water quality - Sampling - Part 3: Preservation and handling of water samples
DIN EN ISO 19458 (K 19) 2006-12	Water quality - Sampling for microbiological analysis
DIN 19643-1 2012-11	Treatment of water of swimming pools and baths - Part 1: General requirements (in this case only 14.2 Sampling location and Sampling)
UBA recommendation 2018-12	Systemic examinations of drinking water installations for legionella according to the Drinking Water Ordinance - Sampling, examination procedure, and expression of the result
UBA recommendation 2018-12	Evaluation of the quality of drinking water regarding the parameters of lead, copper and nickel (“Sampling recommendation”)

1.2 Sensory and visual analysis

DIN EN 1622 (B 3) 2006-10	Water quality - Determination of the threshold odour number (TON) and threshold flavour number (TFN)
DVGW W 273 (M) 2019-05	Instructions for the performance of sensory analyses in water laboratories
MUVA-MET2c022 2020-01	Determination of turbidity, visual method
MUVA-MET2c028 2020-01	Drinking water appearance, qualitative description by visual determination

1.3 Physical and physico-chemical parameters

DIN EN ISO 7887 (C 1) 2012-04	Water quality - Examination and determination of colour (ISO 7887:2011)
DIN EN ISO 7027-1 (C 2) 2016-11	Water quality - Determination of turbidity - Part 1: Quantitative methods (ISO 7027-1:2016)
DIN 38404-C 3 2005-07	Physical and physico-chemical parameter – Part 3: Determination of absorption in the rage of UV radiation, spectral absorption coefficient
DIN 38404-C 4 1976-12	Determination of temperature
DIN EN ISO 10523 (C 5) 2012-04	Water quality - Determination of pH-value (ISO 10523:2008)
DIN EN 27888 (C 8) 1993-11	Water quality – Determination of electrical conductivity
DIN EN ISO 7027-2 (C 22) 2019-06	Water quality - Determination of turbidity - Part 2: Semi-quantitative methods for the assessment of transparency of waters (limitation for methods 1 a) measurement of visual range using the transparency testing tube and 1 b) measurement of visual range in the upper water layers using the transparency testing disc)

1.4 Anions

DIN 38405-D 1 1985-12	Determination of chloride ions
DIN 38405-D 5 1985-01	Determination of sulphate ions
DEV D 8 1971	Determination of the hydrogen carbonate ion (hydrogen carbonate hardness)
DIN 38405-D 9 2011-09	photometric determination of nitrate
DIN EN ISO 6878 (D 11) 2004-09	Water quality - Determination of phosphorus – photometric method using ammonium molybdate

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 *(limitation: nitrate, chloride, sulphate, fluoride - additionally: bromate, chlorate)*
DIN 38405-D 21 1990-10	Photometric determination of dissolved silica
DIN EN ISO 10304-4 (D 25) 1999-07	Water quality - Determination of dissolved anions by liquid chromatography of ions - Part 4: Determination of chlorate, chloride and chlorite in water with low contamination (ISO 10304-4:1997)
DIN EN ISO 15061 (D 34) 2001-12	Water quality - Determination of dissolved bromate - Method by liquid chromatography of ions (ISO 15061:2001)

1.5 Cations

DIN 38406-E 5 1983-10	Determination of ammonia-nitrogen
DIN EN ISO 11885 (E 22) 2009-09	Water quality - Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES)
DIN EN ISO 17294-2 (E 29) 2017-01	Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (ISO 17294-2:2016)
MUVA-MET488 2019-03	Direct determination of mercury in foodstuffs, animal feed, and water by DMA

1.6 Organic parameters

DIN EN ISO 10301 (F 4) 1997-08	Water quality - Determination of highly volatile halogenated hydrocarbons - Gas-chromatographic methods (ISO 10301:1997)

1.7 Gaseous components

DIN EN ISO 5814 (G 22) 2013-02	Water quality - Determination of dissolved oxygen - Electrochemical probe method

1.8 Summary effective and material parameters

DIN EN ISO 8467 (H 5) 1995-05	Water quality - Determination of permanganate index (ISO 8467:1993)
DIN 38409-H 6 1986-01	Water hardness
DIN 38409-H 7 2005-12	Determination of acid and base-neutralizing capacities
DIN 38409-H 9-2 1980-07	Determination of the settleable matter by volume in water and waste water with a sample volume of 2L
DIN ISO 15705 (H 45) 2003-01	Water quality - Determination of the chemical oxygen demand (COD) - Short process

1.9 Rapid test with ready-to-use reagents for water testing

Macherey-Nagel GmbH & Co. KG visocolor®ECO Chlor 2 REF 931015 2016-04	Colorimetric determination of free chlorine, total chlorine, and bound chlorine in drinking water, swimming pools, and water reservoirs by test kit (Measuring range 0.10 -2.00 mg/L Cl_2) (modification: *for cooling water as well*)
DIN EN ISO 7393-2 (G 4-2) 2019-03	Water quality - Determination of free chlorine and total chlorine - Part 2: Colorimetric method using N,N-dialkyl-1,4-phenylenediamine, for routine control purposes

1.10 Microbiological examinations

DIN EN ISO 6222 (K 5) 1999-07	Water quality - Enumeration of cultivable micro-organisms - Colony count by inoculation in a nutrient agar culture medium
DIN EN ISO 9308-2 (K 6-1) 2014-06	Water quality - Enumeration of Escherichia coli and coliform bacteria
DIN EN ISO 16266 (K 11) 2008-05	Water quality - Detection and enumeration of Pseudomonas aeruginosa - Method by membrane filtration (modification: *differentiation also by MALDI-TOF-MS*)
DIN EN ISO 9308-1 (K 12) 2017-09	Water quality - Enumeration of Escherichia coli and coliform bacteria - Part 1: Membrane filtration method for waters with low bacterial background flora

DIN EN ISO 7899-2 (K 15) 2000-11	Water quality - Detection and enumeration of intestinal enterococci - Part 2: Membrane filtration method
DIN EN ISO 11731 (K 23) 2019-03	Water quality - Enumeration of Legionella (ISO 11731:2017) (modification: *differentiation also by MALDI-TOF-MS*)
DIN EN ISO 14189 (K 24) 2016-11	Water quality - Enumeration of Clostridium perfringens - Method using membrane filtration (ISO 14189:2013)
UBA recommendation 2018-12	Systemic examinations of drinking water installations for legionella according to the Drinking Water Ordinance - Sampling, examination procedure, and expression of the result
Drinking Water Ordinance 05.12.1990	Microbiological methods - spore-forming sulphite-reducing anaerobes - examination by fluid enrichment
Drinking Water Ordinance 2018-01	Colony count at 22°C and 36°C in drinking water by pour plate technique (modification: for pool water and cooling water as well)
MUVA-MET564 2012-06	Detection of Pseudomonas aeruginosa/pseudomonads in process water and cheese brine

1.11 Determination of radionuclides by gamma spectrometry in waste water

H-γ-SPEKT-AWASS-01 2000-10	Method for gamma spectrometric determination of radionuclides in waste water
MUVA-MET301 2019-02	Radionuclides in foodstuffs and animal feed, plant material, and waste water (gamma spectrometric)

2 Examination of foodstuffs, animal feed, Food contact materials and articles, environmental samples from the food and feed sector, fitment and utensils along the food chain as well as fitments from primary production

2.1 Sampling of foodstuffs, additives, processing aids, starter cultures, cheese smear and environmental samples in the food sector

DIN EN ISO 707 2009-01	Milk and milk products - Guidance on sampling
DIN ISO 18593 2018-10	Microbiology of the food chain - Horizontal methods for surface sampling
MUVA-MET854 2016-10	Sampling of liquids and cheese smear for microbiological and chemical examinations (here: foodstuffs, additives, processing aids, Starter cultures, cheese smear and environmental samples)

2.2 Physical, physico-chemical, and chemical examinations

2.2.1 Determination of ingredients, minerals as well as parameters in foodstuffs by gravimetric analysis **

DIN EN ISO 1735 2005-05	Cheese and processed cheese products - Determination of fat content - Gravimetric method (Reference method)
DIN EN ISO 1736 2009-03	Dried milk and dried milk products - Determination of fat content - Gravimetric method (Reference method) according to Röse-Gottlieb
DIN EN ISO 1737 2009-03	Evaporated milk and sweetened condensed milk - Determination of fat content - Gravimetric method (Reference method) according to Röse-Gottlieb
DIN EN ISO 2450 2009-03	Cream - Determination of fat content - Gravimetric method (Reference method) according to Röse-Gottlieb
DIN EN ISO 5534 2004-09	Cheese and processed cheese - Determination of the total solids content (Reference method)
DIN EN ISO 7208 2009-03	Skimmed milk, whey and buttermilk - Determination of fat content - Gravimetric method (Reference method) according to Röse-Gottlieb

ISO 5543 IDF 127 2004-12	Caseins and caseinates - Determination of fat content - Gravimetric method (Reference method) according to Schmid-Bondzynski-Ratzlaff
DIN ISO 5550 2020-12	Caseins and caseinates - Determination of moisture content (Reference method)
ISO 6731 IDF 21 2010-11	Milk, cream and evaporated milk - Determination of total solids content (Reference method)
ISO 6734 IDF 15 2010-11	Sweetened condensed milk - Determination of total solids content (Reference method) *(determination by drying)*
ASU L 00.00-18 1997-01 with correction 2016-10	Examination of foodstuffs Determination of fibres in foodstuffs
ASU L 01.00-9 2012-01	Examination of foodstuffs Determination of fat content in milk according to Röse-Gottlieb - Gravimetric method (Reference method) (adoption of the norm of the same name DIN EN ISO 1211, issue November 2010)
ASU L 01.00-20 2013-08	Examination of foodstuffs - Determination of fat content in milk and dairy products according to the gravimetric Weibull-Berntrop method (adoption of the norm of the same name DIN 10342, issue September 1992)
ASU L 01.00-77 2002-05	Examination of foodstuffs - Determination of total ash in milk and dairy products (adoption of the norm of the same name DIN 10477, issue August 2000)
DIN ISO 5544 2020-12	Caseins - Determination of "fixed ash" (Reference method)
DIN ISO 5545 2020-12	Rennet caseins and caseinates - Determination of ash (Reference method)
DIN 10317 1991-08	Examination of foodstuffs Determination of water content in butter
ASU L 04.00-16 1990-12	Examination of foodstuffs Determination of non-fatty dry extract of butter (Routine method) (adoption of the norm of the same name DIN 10463, issue November 1990)

ASU L 04.00-24/1 2013-01	Examination of foodstuffs Determination of water content, non-fatty dry extract, and fat content in butter - Part 1: Determination of water content (Reference method) (adoption of the norm of the same name DIN EN ISO 3727 part 1, issue April 2002)
ASU L 06.00-3 2014-08	Examination of foodstuffs Determination of water content in meat and meat products - gravimetric method – Reference method
ASU L 06.00-4 2017-10	Examination of foodstuffs Determination of ash in meat and meat products
ASU L 06.00-6 2014-08	Examination of foodstuffs Determination of total fat content in meat and meat products - Gravimetric method according to Weibull-Stoldt - Reference method
ASU L 13.05-3 2002-05	Examination of foodstuffs Determination of fat content in margarine and other spreadable fats
IDF 26A 1993-04	Determination of water content in milk powder by gravimetry
IDF 87 2014-01	Determination of dispersibility and wettability of instant dried milk products by gravimetry
VDLUFA VI C 15.2.4 1995	Determination of free fat in fatty, dried dairy products by gravimetry
MUVA-MET204 2018-04	Determination of calcium content in milk and dairy products by gravimetry
MUVA-MET298 2020-11	Drained net weight examination of solid foodstuffs with covering liquids by gravimetry
MUVA-MET2c019 2020-10	Determination of filling quantity of foodstuffs in pre-packaged products by gravimetry and volumetry
MUVA-MET2c026 2020-11	Determination of dry matter in milk and dairy products by microwave technology / halogen radiation

2.2.2 Determination of ingredients as well as parameters in foodstuffs by titration **

DIN EN ISO 5943 2007-01	Cheese and processed cheese products - Determination of chloride content - Potentiometric titration method *(ISO 5943:2006)*
ASU L 01.00-7 2002-05	Examination of foodstuffs - Determination of acidity of milk and liquid dairy products (adoption of the norm of the same name DIN 10316, issue August 2000)
ASU L 01.00-10/1 2016-03	Examination of foodstuffs - Determination of nitrogen content in milk and dairy products - Part 1: Kjeldahl principle and calculation of crude protein content (adoption of the norm of the same name DIN EN ISO 8968-1, issue June 2014)
ASU L 06.00-7 2014-08 with addition 2018-06	Examination of foodstuffs - Determination of crude protein content in meat and meat products - Titrimetric method according to Kjeldahl (Reference method)
ASU L 13.00-5 2012-01	Examination of foodstuffs - Determination of acid value and acidity of animal and vegetable fats and oils (adoption of the norm of the same name DIN EN ISO 660, issue October 2009)
ASU L 13.00-6 1991-06	Examination of foodstuffs - Determination of peroxide value in fats and oils, method according to Wheeler, method according to Sully
IDF 12C 2000	Determination of sodium chloride content in butter by titration
VDLUFA VI C 8.4 2000	Determination of titratable acidity of dried milk products - Reference method, titrimetric
VDLUFA VI C 10.6.2 1988	Determination of chloride content in cheese by method according to Erbacher
VDLUFA VI C 16.3 1988	Determination of iodine value according to Hanus in fats and oils
VDLUFA VI C 16.5 1993	Determination of butyric acid value (semi-micro determination) in milk, dairy products, and foodstuffs
VDLUFA VI C 30.3 1985-01	Determination of NPN (non-protein nitrogen) according to Kjeldahl in milk and dairy products

VDLUFA VI C 30.4 1985-01	Determination of casein content in milk
MUVA-MET009 2011-10	Determination of vitamin C in infant food, milk, and vitaminized dairy products as well as processed cheese with ascorbate additives by titrimetric rapid test
MUVA-MET110 2016-01	Determination of chloride content in cheese, processed cheese, meat products, and salt baths by potentiometric titration

2.2.3 Butyrometric determination of fat in milk and dairy products

DIN 10329 1976-06	Determination of fat content of cream; weighing method according to Roeder

2.2.4 Determination of ingredients as well as additives in foodstuffs by photometry **

DIN EN ISO 8069 2007-09	Dried milk - Determination of content of lactic acid and lactates (ISO 8069:2005)
DIN EN ISO 14673-3 2004-05	Milk and milk products - Determination of nitrate and nitrite contents - Part 3: Method using cadmium reduction and flow injection analysis with in-line dialysis (Routine method)
DIN 10335 2010-09	Milk and milk products except milk powder - Determination of L- and D-lactic acid (L- and D-lactate) content - Enzymatic method
ASU L 00.00-46/2 1999-11	Examination of foodstuffs Determination of sulphite in foodstuffs - Part 2: Enzymatic method (adoption of the norm of the same name DIN EN 1988 Part 2, issue May 1989)
ASU L 01.00-17 2016-10	Examination of foodstuffs Determination of lactose and galactose content in milk and dairy products - Enzymatic method (adoption of the norm of the same name DIN 10344, issue May 2015)
ASU L 01.00-31 1988-12	Examination of foodstuffs Determination of lactulose content in milk
ASU L 01.00-41 1991-12	Examination of foodstuffs Determination of the phosphatide level in milk, dairy products, and cheese

ASU L 01.00-86 2012-01	Examination of foodstuffs Determination of citric acid content in milk and dairy products - Enzymatic method (adoption of the norm of the same name DIN 10325, issue July 2010)
ASU L 01.00-90 2014-02	Examination of foodstuffs Determination of lactose content in lactose-reduced milk and lactose-reduced dairy products in the presence of glucose - Enzymatic method
ASU L 01.00-92 2016-03	Examination of foodstuffs Determination of total phosphorus content in milk and dairy products Spectro-Photometrical method
ASU L 02.00-12 2009-06	Examination of foodstuffs Determination of sucrose and glucose content in dairy products and ice cream - Enzymatic method (adoption of the norm of the same name DIN 10326, issue December 2007)
ASU L 03.00-39 2010-09	Examination of foodstuffs Determination of starch in grated cheese Enzymatic method
ASU L 10.00-1 1982-05	Examination of foodstuffs Determination of histamine in fish by fluorescence photometry - application for determination in cheese
ASU L 26.00-2 2001-07	Examination of foodstuffs - Continuous flow process for the determination of nitrate content in vegetable products after cadmium reduction (adoption of the norm of the same name DIN EN 12014-7, issue August 1998)
Boehringer Mannheim/ r-biopharm D-glucose/D-fructose Order No. 10139106035 2017-08	UV-test for the determination of D-glucose and D-fructose in foodstuffs
Boehringer Mannheim/ r-biopharm Acetic acid (Acetate) Order No. 10148261035 2017-08	UV-test for the determination of acetic acid in foodstuffs

Boehringer Mannheim/ r-biopharm Ethanol Order No. 10176290035 2017-08	UV-test for the determination of ethanol in foodstuffs
Boehringer Mannheim/ r-biopharm Starch Order No. 10207748035 2017-07	UV-test for the determination of native starch and of partial starch hydrolysate in foodstuffs
Boehringer Mannheim/ r-biopharm Urea/ammoniac Order No. 10542946035 2017-09	UV-test for the determination of urea and ammoniac in foodstuffs
Boehringer Mannheim/ r-biopharm Sucrose/D-glucose/ D-fructose Order No. 10716260035 2017-11	UV-test for the determination of sucrose, D-glucose, and D-fructose in foodstuffs
Boehringer Mannheim/ r-biopharm Ammoniac Order No. 11112732035 2017-07	UV-test for the determination of ammoniac in foodstuffs
Boehringer Mannheim/ r-biopharm Maltose/sucrose/D-glucose Order No. 11113950035 2017-11	UV-test for the determination of maltose, sucrose, and D-glucose in foodstuffs
MUVA-MET027 2009-04	Determination of gelatine in dairy products by photometry

2.2.5 Determination of ingredients as well as additives in foodstuffs by spectroscopic methods

MUVA-MET2c025 2020-11	Determination of the fat content in milk and dairy products by nuclear magnetic resonance (NMR)

2.2.6 Determination of the pH value of milk, dairy products, and fruit juice by electrode measurement **

ASU L 02.09-6 2018-10	Examination of foodstuffs Determination of the pH value of caseins and caseinates - Reference method (adoption of the norm of the same name DIN 10456, issue April 1989)
ASU L 04.00-13 2006-12	Examination of foodstuffs Determination of the pH value of butter plasm (adoption of the norm of the same name DIN 10349, issue October 2004)
VDLUFA VI C 8.2 2000	Determination of the pH value of milk and dairy products (Electrometric method)
MUVA-MET2c029 2020-01	Determination of the pH value of fruit juice (Electrometric method)

2.2.7 Determination of the phosphatase activity by fluorimetry in milk and milk products **

DIN EN ISO 11816-1 2014-03	Milk and milk products Determination of alkaline phosphatase activity - Part 1: Fluorimetric method for milk and milk-based drinks
DIN EN ISO 11816-2 2016-12	Milk and milk products Determination of alkaline phosphatase activity - Part 2: Fluorimetric method for cheese
MUVA-MET199 2016-11	Determination of alkaline phosphatase activity in milk, liquid dairy products, dried milk products, and butter serum by fluorimetry

2.2.8 Determination of additives by thin-layer-chromatography in foodstuffs

MUVA-MET017 2020-10	Determination of thickeners and stabilisers on polysaccharide basis in liquid dairy products like condensed milk and whipped cream, cream cheese, yoghurt (with fruits as well) as well as other foodstuffs by thin layer chromatography (TLC)

2.2.9 Determination of proteins by electrophoresis (PAGIF, SDS-PAGE) in cheese, milk and dairy products **

ASU L 01.00-39 1995-01	Examination of foodstuffs Species determination in milk, dairy products, and cheese by isoelectric focusing (PAGIF)
ASU L 03.52-1 1997-09	Examination of foodstuffs Determination of cow's milk casein in cheese from sheep's, goat's, or buffalo's milk or mixtures of sheep's, goat's, or buffalo's milk (Reference method)
MUVA-MET197 2019-01	Determination of whey protein and casein content in milk and dairy products by electrophoresis
MUVA-MET207 2016-06	Determination of the degree of denaturation of β-lactoglobulin in milk and dairy products by electrophoresis

2.2.10 Hydrometric density determination of milk and dairy products

ASU L 01.00-28 1988-12 with correction 2002-12	Examination of foodstuffs - Hydrometric determination of density of milk (adoption of the norm of the same name DIN 10459, issue October 1988)

2.2.11 Determination of the degree of purity by filtration of dairy products **

VDLUFA VI C 26.3 1995	Determination of the degree of purity of dried milk products by filtration
MUVA-MET150 2016-04	Determination of the degree of purity of caseins and caseinates by filtration

2.2.12 Determination of the particle size by sieve analysis of dairy products

DIN 66165-2 2016-08	Particle size analysis - Sieving analysis - Procedure

2.2.13 Cryoscopic examination of milk

ASU L 01.00-29 2019-12	Examination of foodstuffs Determination of the freezing point of milk - Thermistor cryoscope method (Reference method) (adoption of the norm of the same name DIN EN ISO 5764, issue October 2009)

2.2.14 Determination of whey proteins by turbidimetry of milk products

ADPI Bulletin 916, p. 54 ff. 1990	Determination of undenatured whey protein nitrogen in skimmed milk powder

2.2.15 Electrolytic examination of foodstuffs

ISO 18787 2017-11	Foodstuffs - Determination of water activity

2.2.16 Product specific physical, physicochemical, and technical examinations of milk and dairy products

ISO 8156-IDF 129 2005-10	Determination of solubility of dried milk products
ASU L 04.00-9 1986-05	Examination of foodstuffs Determination of the water dispersion in butter - Indicator paper method
ASU L 04.00-14 1996-02	Examination of foodstuffs Determination of the hardness of butter (adoption of the norm of the same name DIN 10331, issue March 1996)
VDLUFA VI C 12.4 1985-01	Determination of density by vibration measurement
VDLUFA VI C 13.2 1985-01	Detection of pasteurisation by peroxidase test in milk and dairy products
VDLUFA VI C 26.4 1995	Determination of bulk density of dried milk products

VDLUFA VI C 26.7 4th edition, 8th supplement 2020-01	Physical examination of whipped cream
DLG test regulations 4th edition 2020	Evaluation of heat stability and whitening ability of condensed milk and coffee cream by points score according to DLG test regulations
MUVA-MET220 2009-05	Detection of lipase in dried milk products by quantitative colour test

2.2.17 High-performance liquid chromatographic examination of foodstuffs

2.2.17.1 Determination of ingredients, additives, contaminants as well as residues of veterinary medicinal products by HPLC with standard detectors (UV-, FLD-, PAD-detectors) in foodstuffs **

ISO 27105/IDF216 2016-04	Determination of lysozyme in milk and Dairy products by HPLC
DIN EN ISO 9233-2 2018-08	Determination of natamycin content Part 2: High-performance liquid chromatographic method for cheese, cheese rind and processed cheese
DIN EN 12821 2009-08	Determination of vitamin D (cholecalciferol and ergocalciferol) in Dairy products, baby food and other foodstuffs
DIN EN 14122 2014-08	Determination of vitamin B1 by HPLC
DIN EN 15607 2009-09	Determination of biotin in foodstuffs by HPLC
DIN EN 15652 2009-09	Determination of niacin (nicotinic acid and nicotinamide) in foodstuffs by HPLC
DIN 10482-2 2006-10	Determination of Annatto content in cheese - Part 2: High performance liquid chromatographic method
ASU L 00.00-9 1984-11	Examination of foodstuffs Determination of preservatives in low-fat foodstuffs
ASU L 00.00-29 2001-07	Examination of foodstuffs Determination of sodium cyclamate in foodstuffs - HPLC method (adoption of the norm of the same name DIN EN 12857, issue July 1999, as a replacement for the previous official method L 00.00-29)

ASU L 00.00-28 2001-07	Examination of foodstuffs Determination of acesulfame-K, aspartame, and sodium saccharine in foodstuffs - HPLC method (adoption of the norm of the same name DIN EN 12856, issue July 1999, as a replacement for the previous official method L 00.00-28)
ASU L 00.00-62 2001-07	Examination of foodstuffs Determination of vitamin E (α-, β-, γ- und δ-tocopherol) in foodstuffs by HPLC (adoption of the norm of the same name DIN EN 12822, issue July 2000)
ASU L 00.00-63/1 2001-07	Examination of foodstuffs Determination of vitamin A in foodstuffs by HPLC - Part 1: Determination of all-trans-retinol and 13-cis-retinol (adoption of the norm of the same name DIN EN 12823-1, issue July 2000)
ASU L 00.00-86 2004-07	Examination of foodstuffs Determination of vitamin K1 by HPLC (adoption of the norm of the same name DIN EN 14148, issue October 2003)
ASU L 01.00-65 1997-09	Examination of foodstuffs Determination of content of acid-soluble ß-lactoglobulin in pasteurized milk - reversed phase high-performance liquid chromatographic method (adoption of the norm of the same name DIN 10473, issue December 1997)
ASU L 31.00-20 2004-12	Examination of foodstuffs Determination of patulin in clear and cloudy apple juice and apple puree - HPLC method with cleanup by solid-liquid distribution (adoption of the norm of the same name DIN EN 14177, issue March 2004)
ASU L 40.00-10/3 2003-12	Examination of foodstuffs Examination of honey - Determination of hydroxymethylfurfural - high-performance liquid chromatographic method (adoption of the norm of the same name DIN 10751 Part 3, issue February 2002)
DVO (EU) No. 2018/150 annex III last revised 30/01/2018	Implementing Regulation as regards methods for the analysis and quality evaluation of milk and milk products eligible for public intervention and aid for private storage Determination of rennet whey powder in skimmed milk powder

GB 1903.17 2016	National food safety standard - Food nutritional fortification substance - Lactoferrin *(Determination of lactoferrin in lactoferrin products by HPLC and UV detection)*
Ital. law gazette No. 162 Decree of 16/05/1996	Determination of furosine in milk and Dairy products by HPLC
SLMB 62/14 2000-03	Determination of vitamin C (ascorbic acid) in foodstuffs by HPLC
MUVA-MET008 2018-11	Determination of Vitamin B6 in milk, dairy products, children's food, and other foodstuffs by HPLC-ion-pair chromatography and FLD detection
MUVA-MET018 2010-05	Determination of theobromine, caffeine, and theophylline in coffee-, tea-, and cocoa-based foodstuffs by HPLC and UV detection
MUVA-MET021 2013-11	Determination of biogenic amines histamine, putrescine, cadaverine, tryptamine, and tyramine in cheese and foodstuffs by HPLC and FLD detection
MUVA-MET044 2009-04	Determination of chemotherapeutics (specifically sulfonamides, antiparasitics, and other residues of veterinary medicinal products) in animal tissue, milk, and dairy products by HPLC and UV detection
MUVA-MET062 2011-01	Determination of Vitamin B_2 in milk, dairy products, children's food, and other foodstuffs by HPLC and FLD detection
MUVA-MET066 2009-04	Determination of ß-carotene in children's food by HPLC and UV detection
MUVA-MET067 2009-04	Determination of vitamin B_{12} in milk, dairy products, children's food, and other foodstuffs by SPE and HPLC and UV detection
MUVA-MET100 2021-05	Determination of rennet whey powder content via glycomacropeptide A (GMP A) in milk and whole milk powders by HPLC and UV detection
MUVA-MET2c015 2018-01	Determination of mono- and disaccharides in foodstuffs by HPLC and PAD detection

2.2.17.2 Determination of ingredients, additives, contaminants, pesticide residues as well as residues of veterinary medicinal products by high-performance liquid chromatography with mass spectrometry (HPLC-MS/MS) in foodstuffs, dairy auxiliary materials **

ASU L 00.00-115/1 2018-10	Examination of foodstuffs Revision of the multi-method for the determination of pesticide residues in plant foods using GC-MS and/or LC-MS/MS after acetonitrile extraction/partitioning and clean-up with dispersive SPE (QuEChERS) (Revision of the method L 00.00-115 by the working group "pesticides" according to § 64 LFGB) (Restriction: here for the food groups: fruit and vegetables (except dried fruit, honey), *foods of animal origin* (except eggs); as well as organic food)
ASU L 00.00-134 2010-09	Examination of foodstuffs Determination of coumarin in cinnamon containing foodstuffs by HPLC-DAD or HPLC-MS/MS
ASU L 06.00-57(V) 2009-06	Examination of foodstuffs Determination of macrolide and lincosamide residues in kidneys and milk by LC-MS/MS
ASU L 31.00-20 2004-12	Examination of foodstuffs Determination of patulin in clear and cloudy apple juice and apple puree - HPLC method with cleanup by solid-liquid distribution (adoption of the norm of the same name DIN EN 14177, issue March 2004)
ASU L 40.00-10/3 2003-12	Examination of foodstuffs Examination of honey - Determination of hydroxymethylfurfural - high-performance liquid chromatographic method (adoption of the norm of the same name DIN 10751 Part 3, issue February 2002) (Modification: here using LC-MS/MS)
SLMB 1401.1 2005-01	Determination of nitrofuran metabolites by LC-MS/MS in foodstuffs
SLMB 1575.1 2006-09	Determination of quinolone and fluorchinolone antibiotics in foodstuffs by LC-MS/MS
MUVA-MET050 2019-01	Determination of aflatoxins M1, B1, B2, G1, and G2 in nuts, spices, milk, milk powder, and dairy products after cleanup by immunoaffinity columns (LC-MS/MS)

MUVA-MET076 2011-03	Determination of pantothenic acid in foodstuffs by stable isotope dilution essay via LC-MS/MS
MUVA-MET077 2008-04	Determination of free folic acid in foodstuffs by stable isotope dilution essay via LC-MS/MS
MUVA-MET080 2018-09	Multi-method for simultaneous determination of Fusarium toxins (Type A and B trichothecene, fumonisins, and zearalenone) by LC-MS/MS in foodstuffs
MUVA-MET083 2010-11	Determination of chloramphenicol in foodstuffs by LC-MS/MS
MUVA-MET085 2010-11	Multi-method for determination of betalactam antibiotics in milk and dairy products by LC-MS/MS
MUVA-MET089 2011-12	Determination of aminoglycosides in milk and dairy products by LC-MS/MS
MUVA-MET095 2018-10	Determination of glyphosate, glufosinate, and AMPA in milk by LC-MS/MS
MUVA-MET096 2019-04	Examinations of foodstuffs - Determination of residues of antibiotic groups benzimidazole, quinolones, tetracyclines and sulphonamides in milk and dairy products by HPLC-MS/MS
MUVA-MET097 2020-01	Determination of nitroimidazoles in milk, dairy products and eggs by SPE and LC/MS-MS
MUVA-MET357 2012-05	Determination of melamine and cyanuric acid in milk and dairy products by HPLC-MS/MS
MUVA-MET359 2022-10	Determination of quaternary ammonium compound residues (QAV) in milk and dairy products by LC-MS/MS
MUVA-MET362 2020-01	Determination of chlorate and perchlorate in milk, dairy products, dairy auxiliary materials, fruit, vegetables, aqueous solutions, water, powder and whey by LC-MS/MS
MUVA-MET403 2020-03	Determination of chlorinated, phosphorous, and nitrogenous pesticides as well as pyrethrum, piperonyl butoxide and polychlorinated biphenyls in foodstuffs by gas chromatography (GC-ECD, GC-FPD, GC-MS) and liquid chromatography (LC-MS/MS) *(Restriction: here* for food groups: *fruit and vegetables (except dried fruit and honey), foods of animal origin (except eggs); as well as organic foodstuffs)*

2.2.18 Gas chromatographic examination of foodstuffs

2.2.18.1 Determination of ingredients, additives, organic contaminants by gas chromatography with standard detectors (GC-FID, GC-ECD, GC-FPD) in foodstuffs **

ASU L 01.00-35 1990-06	Examination of foodstuffs Determination of volatile halogenated hydrocarbons in milk
ASU L 17.00-12 1999-11 with correction 2003-07	Examination of foodstuffs Determination of butyric acid as methyl ester in fat from bread including biscuits made from bread dough (Application for confectionery and butter preparations as well)
MUVA-MET403 2020-03	Determination of chlorinated, phosphorous, and nitrogenous pesticides as well as pyrethrum, piperonyl butoxide, and polychlorinated biphenyls in foodstuffs by gas chromatography (GC-ECD, GC-FPD, GC-MS) and liquid chromatography (LC-MS/MS) *(Restriction: here* for food groups: *fruits and vegetables (except dried fruit and honey), foods of animal origin (except eggs); as well as organic foodstuffs)*
MUVA-MET412 2020-12	Determination of fatty acid patterns in fats (after extraction from foodstuffs if required) by capillary gas chromatography of methyl esters (GC-FID)
MUVA-MET415 2018-11	Determination of sterols in fats and fatty foodstuffs by capillary gas chromatography (GC-FID or GC-MS)
MUVA-MET418 2020-03	Simultaneous determination of organochlorine pesticides (OCP) and polychlorinated biphenyls (PCB's) in milk, dairy products and other foodstuffs by capillary-GC-ECD according to Steinwandter
MUVA-MET482 2011-05	Detection and determination of foreign fat in milk fat by gas chromatographic triglyceride analysis (HT-GC-FID)

2.2.18.2 Determination of organic contaminants and residues by gas chromatography with mass spectrometry (GC-MS) in foodstuffs **

MUVA-MET351 2021-04	Determination of polychlorinated dibenzodioxins and dibenzofurans as well as dioxin-like PCB in milk and dairy products by gas chromatography with mass spectrometry (GC-MS)
MUVA-MET360 2020-02	Determination of residues of volatile aromatic hydrocarbons in milk and dairy products by headspace-GC-MS

MUVA-MET361 2020-08	Determination of plasticisers and phthalates in milk, dairy products, and other fatty foodstuffs by GC-MS
MUVA-MET403 2020-03	Determination of chlorinated, phosphorous, and nitrogenous pesticides as well as pyrethrum, piperonyl butoxide, and polychlorinated biphenyls in foodstuffs by gas chromatography (GC-ECD, GC-FPD, GC-MS) and liquid chromatography (LC-MS/MS) *(Restriction: here* for food groups: *fruits and vegetables (except dried fruit and honey), foods of animal origin (except eggs); as well as organic foodstuffs)*
MUVA-MET408 2020-01	Determination of polycyclic aromatic hydrocarbons (PAH) in milk, dairy products, and other fatty foodstuffs by GC-MS
MUVA-MET 413 2019-01	Determination of short chain free fatty acids in dairy products (cheese, milk powder) by headspace gas chromatography (HS-GC-MSD)
MUVA-MET 415 2018-11	Determination of sterols in fats and fatty foodstuffs by capillary gas chromatography (GC-FID or GC-MS)

2.2.19 Determination of organic contaminants by coupled high-performance liquid chromatography and gas chromatography with standard detector (LC-GC-FID) in foodstuffs

DIN EN 16995 2017-08	Foodstuffs - Vegetable oils and foodstuff on basis of vegetable oils - Determination of mineral oil saturated hydrocarbons (MOSH) and mineral oil aromatic hydrocarbons (MOAH) with on-line HPLC-GC-FID analysis (modification: matrix here only milk, dairy products, milk fat)

2.2.20 Determination of mercury in foodstuffs and animal feed by Direct Mercury Analyzer (DMA)

MUVA-MET488 2019-03	Direct determination of mercury in foodstuffs, animal feed, and water by DMA

2.2.21 Determination of minerals and element traces by mass spectrometry with inductively coupled plasma (ICP-MS) in foodstuffs **

DIN EN 15111 2007-06	Foodstuffs – Determination of trace elements – Determination of iodine by ICP-MS (inductively coupled plasma mass spectrometry)
MUVA-MET490 2021-04	Determination of metal traces in foodstuffs by ICP-MS (*Restriction: for the determination of aluminium, arsenic, lead, cadmium, chromium, iron, copper, manganese, molybdenum, nickel, selenium*)

2.2.22 Determination of minerals and element traces by atomic emission spectrometry with inductively coupled plasma (ICP-OES) in foodstuffs **

ASU L-00.00-144 2019-07	Examination of foodstuffs Determination of calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium, sulphur and zinc in foodstuffs by ICP-OES (adoption of the norm of the same name DIN EN 16943, issue July 2017)
MUVA-MET450 2021-04	Determination of calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium, sulphur, zinc, strontium, chromium, nickel and tin in foodstuffs by ICP-OES

2.2.23 Determination of radioactivity of foodstuffs, animal feed

2.2.23.1 Determination of radionuclides by gamma spectrometry in foodstuffs, animal feed **

F-γ-SPEKT-MILCH-01 1992-09	Method for gamma spectrometric determination of radionuclides in milk samples
F-γ-SPEKT-MIPRO-01 1992-09	Method for gamma spectrometric determination of radionuclides in cheese samples (imports)
E-γ-SPEKT-LEBM-01 1997-05	Method for gamma spectrometric determination of radionuclides in foodstuffs
F-γ-SPEKT-FUMI-01 1998-11	Method for gamma spectrometric determination of radionuclides in animal feed and animal feed raw materials
F-γ-SPEKT-PFLAN-01 1998-11	Method for gamma spectrometric determination of radionuclides in plant samples (indicators)

MUVA-MET301 2019-02	Radionuclides in foodstuffs, animal feed, plant material, and waste water (gamma spectrometric)

2.2.23.2 Determinations of strontium-90 or strontium 89/90 by beta proportional counting in foodstuffs and animal feed **

F-Sr-90-MILCH-02 1992-09	Method for determination of strontium-90 in milk (tributyl phosphate method)
F-Sr-90-FUMI-02 1992-09	Method for determination of strontium-90 in animal feed samples and vegetation samples (tributyl phosphate method)
E-Sr-90-LEBM-02 1992-09	Method for determination of strontium-90 in foodstuffs via daughter radionuclide yttrium-90
MUVA-MET302 2021-11	Determination of strontium-90 in milk, dairy products, meat, fish and plant-based foods by beta proportional counting

2.3 Immunological examinations of foodstuffs

2.3.1 Detection of allergens by ELISA-procedures in foodstuffs *

r-biopharm RIDASCREEN® ß-lactoglobulin REF. No. R4901 2016-11	Immunoenzymatic detection of ß-lactoglobulin in foodstuffs by ELISA test kit
RIDASCREEN®FAST egg REF. No. R6402 r-biopharm 2015-12	Immunoenzymatic detection of egg white in foodstuffs by ELISA test kit
nutriLinia® peanuts-E item. No. NC-6014 Romer 2017-02	Immunoenzymatic detection of peanuts in foodstuffs by ELISA test kit
RIDASCREEN® gliadin REF. No. R7001, r-biopharm 2015-10	Immunoenzymatic detection of gluten in foodstuffs by ELISA test kit

nutriLinia® hazelnut-E item. No. NC-6016, Romer 2017-02	Immunoenzymatic detection of hazelnut in foodstuffs by ELISA test kit
nutriLinia® almond-E item. No. NC-6018 Romer 2017-02	Immunoenzymatic detection of almond in foodstuffs by ELISA test kit
nutriLinia® soy-E item. No. NC-6011 Romer 2017-02	Immunoenzymatic detection of soy in foodstuffs by ELISA test kit
RIDASCREEN®FAST mustard item. No. R6152 r-biopharm 2017-06	Immunoenzymatic detection of mustard in foodstuffs by ELISA test kit
RIDASCREEN®FAST lysozyme REF. No. R6452 r-biopharm 2016-08	Immunoenzymatic detection of lysozyme in foodstuffs by ELISA test kit
nutriLinia® walnut-E item. No. NC-6013 Romer 2017-02	Immunoenzymatic detection of walnut in foodstuffs by ELISA test kit
nutriLinia® cashew-E item. No. NC-6010 Romer 2017-02	Immunoenzymatic detection of cashew in foodstuffs by ELISA test kit
nutriLinia® pistachio-E item. No. NC-6019 Romer 2017-02	Immunoenzymatic detection of pistachio in foodstuffs by ELISA test kit
AgraQuantPlus Macadamia item. No. 10002053 Romer 2019-08	Immunoenzymatic detection of macadamia in foodstuffs by ELISA test kit

nutriLinia® sesame-E item. No. NC-6005 Romer 2017-02	Immunoenzymatic detection of sesame in foodstuffs by ELISA test kit

2.3.2 Determination of veterinary medicinal products and toxins by enzyme immunoassay (ELISA) in foodstuffs and bacterial cultures *

r-biopharm RIDASCREEN® Aflatoxin M_1 REF. No. R1121 2018-10	Determination of aflatoxin M1 in milk and milk powder by ELISA
RANDOX Laboratories Chloramphenicol REF. No. CN 1469 2016-08	Determination of chloramphenicol in milk and meat by enzyme immunology
Romer Labs Gentamycin Order No.: 52300 2017-03	Determination of gentamycin in milk by ELISA
Romer Labs Neomycin Order No. 52400 2017-03	Determination of neomycin in milk by ELISA
Europroxima / r-biopharm Streptomycin/ Dihydrostreptomycin Order No. 5111STREP(17) 2020-03	Determination of streptomycin/dihydrostreptomycin in milk by ELISA
r-biopharm RIDASCREEN® SET Total REF. No. R4105 2016-10	Detection of staphylococcal enterotoxins (A-E) in foodstuffs and bacterial cultures by sandwich enzyme immunoassay

2.4 Microbiological examinations of foodstuffs, animal feed, dairy auxiliary materials, products of primary production, environmental samples from the food and feed sector, fitment and utensils along the food chain as well as fitments from primary production

2.4.1 Sample preparation for microbiological examinations by dilutions in foodstuffs, animal feed, dairy auxiliary materials, fitment and utensils along the food chain as well as products from primary production as well as environmental samples from the food and feed sector *

DIN EN ISO 6887-2 2017-07	Microbiology of the food chain - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Part 2: Specific rules for the preparation of meat and meat products
DIN EN ISO 6887-4 2017-07	Microbiology of the food chain - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Part 4: Specific rules for the preparation of miscellaneous products
DIN EN ISO 6887-5 2020-08	Microbiology of food and animal feeding stuffs - Preparation of test samples, initial suspension and decimal dilutions for microbiological examination - Part 5: Specific rules for the preparation of milk and milk products

2.4.2 Determination of pathogenic bacteria by cultural microbiological examinations in foodstuffs, animal feed, dairy auxiliary materials, primary production products, environmental samples from the food and feed sector, fitment and utensils along the food chain and fitments from primary production **

DIN EN ISO 6579-1 2020-08	Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of Salmonella - Part 1: Detection of Salmonella spp.
DIN EN ISO 6888-1 2019-06	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) - Part 1: Technique using Baird-Parker agar medium
DIN EN ISO 6888-3 2005-07	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) - Part 3: Detection and MPN technique for low numbers *(ISO 6888-3:2003)*
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

DIN EN ISO 11290-2 2017-09	Microbiology of the food chain - Horizontal method for the detectior and enumeration of Listeria monocytogenes and of Listeria spp. - Pa 2: Enumeration method
DIN EN ISO 22964 2017-08	Microbiology of the food chain - Horizontal method for the detectior of Cronobacter spp.
DIN EN ISO 7932 2020-11	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of presumptive Bacillus cereus - Colony-count technique at 30 degrees C
ASU L 00.00-57 2006-12	Examination of foodstuffs - Horizontal method for the enumeration of Clostridium perfringens in foodstuffs - Colony count method (adoption of the norm of the same name DIN EN ISO 7937, issue November 2004)
ASU L 00.00-108 2007-04	Examination of foodstuffs - Horizontal method for the determinatior of low counts of presumptive Bacillus cereus in foodstuffs - Most probable number (MPN) and detection method (adoption of the norm of the same name DIN EN ISO 21871, issue April 2006)
ASU L 01.00-72 2011-01	Examination of foodstuffs - Determination of presumptive Bacillus cereus in milk and dairy products - Colony count at 37°C (adoption of the norm of the same name DIN 10198, issue July 2010)
Bio MérieuxALOA® One Day Cert.-No. AES 10/03-09/00 2019-12	Detection of Listeria monocytogenes and Listeria spp. in foodstuffs and environmental samples
MUVA-MET615 2021-03	Detection of salmonellae in foodstuffs, animal feed, and environmental samples - Quick method with Rappaport-Vassiliadis (MSRV)-culture media
MUVA-MET643 2014-04	Detection of Clostridium perfringens by enrichment process (TPGY-Bouillon/egg yolk-lactose-agar)

2.4.3 Determination of bacteria, yeasts, and moulds by cultural microbiological examinations in foodstuffs, animal feed, dairy auxiliary materials, products of primary production, environmental samples from the food and feed sector, fitment and utensils along the food chain as well as fitments from primary production**

ISO 4831 2006-08	Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of coliforms - Most probable number technique
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 (Restriction: only detection method according to chapter 9.1)
ISO 13559 2002-11	Enumeration of contaminating microorganisms (Colony-count technique at 30 °C) in Butter, fermented milks and fresh cheese by spread plate method
ISO 15213 (E) 2003-05	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of sulphite-reducing bacteria growing under anaerobic conditions
ISO 15214 1998-08	Detection of mesophilic lactic acid bacteria in foodstuffs and animal feed
ISO 17410 2019-07	Horizontal method for the enumeration of psychrotrophic microorganisms in foodstuffs and animal feed by spread plate method
ISO 21527-1 2008-07	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of yeasts and moulds – Part 1: Colony count technique in products with water activity greater than 0,95
ISO 21527-2 2008-07	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of yeasts and moulds - Part 2: Colony count technique in products with water activity less than or equal to 0,95
ISO 29981 2010-02	Milk products - Enumeration of presumptive bifidobacteria - Colony count technique at 37 °C
DIN EN ISO 4833-1 2013-12	Microbiology of the food chain - Horizontal method for the enumeration of microorganisms - Part 1: Colony Count at 30°C by pour plate technique (ISO 4833-1:2013)

DIN EN ISO 4833-2 2014-05	Microbiology of the food chain - Horizontal method for the enumeration of microorganisms - Part 2: Colony Count at 30°C by surface plating technique (ISO 4833-2:2013 + Cor. 1:2014)
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 (ISO 21528-1:2017)
DIN EN ISO 21528-2 2019-05	Microbiology of the food chain - Horizontal method for the detection and enumeration of Enterobacteriaceae - Part 2: Colony-count technique (ISO 21528-2:2017, Cor. 2018-06-01)
DIN ISO 16649-2 2020-12	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of β-glucuronidase-positive Escherichia coli - Part 2: Colony-count technique at 44 °C using 5-bromo-4-chloro-3-indolyl β-D-glucuronide (ISO 16649-2:2001)
DIN 10172-1 1992-04	Microbiological analysis of milk - Determination of coliforms - Method with liquid medium
ASU L 01.00-3 1987-03	Examination of foodstuffs Determination of coliforms in milk, dairy products, butter, cheese, and ice cream; method with solid culture medium
ASU L 01.00-25 1997-09 with correction 2002-12	Examination of foodstuffs Determination of Escherichia coli in milk, dairy products, butter, cheese, and ice cream; method with liquid culture medium
ASU L 01.00-37 1991-12	Examination of foodstuffs Determination of the amount of yeasts and moulds in milk and dairy products Reference method
VDLUFA VI M 7.3.2 1985-01	Determination of proteolytic microorganisms (proteolytes) in milk, dairy products, infant and toddler food by pour plate method
VDLUFA VI M 7.6.2 1985-01	Milk and dairy products - Determination of lipolytic microorganisms (lipolytes) Colony count method with tributyrin agar
VDLUFA VI M 7.8.2 2. supplement 1993	Determination of Enterococcus in milk and dairy products by spread plate method
VDLUFA VI M 7.9.3 1996	Determination of heterofermentative lactic acid bacteria in milk and dairy products by method with liquid culture media

VDLUFA VI M 7.11.2 1988	Determination of propionibacteria in hard cheese and dairy auxiliary material by spread plate method
VDLUFA VI M 7.12.2 1993	Determination of pseudomonades in dairy products and water by spread plate method
VDLUFA VI M 7.13 1996	Determination of thermoduric (thermoresistant) microorganisms in milk and dairy products by pour plate method
VDLUFA VI M 7.16.2 1985-01	Determination of acidifying microorganisms in milk and dairy products by pour plate method
VDLUFA VI M 7.16.3 2003	Enumeration and identification of characteristic yoghurt bacteria - Thermophilic streptococci in yoghurt and yoghurt products by spread plate method
VDLUFA VI M 7.16.3 2003	Enumeration and identification of characteristic yoghurt bacteria - Lactobacilli in yoghurt and yoghurt products by spread plate method
VDLUFA VI M 7.17.2 1993	Milk and dairy products - Determination of spores of aerobic spore formers (Bacillus)
VDLUFA VI M 7.18.2.1 1996	Determination of anaerobic gas-forming spore formers in milk and dairy products by MPN method
VDLUFA M 7.18.3.1 1996	Determination of cheese spoiling Clostridia in dairy products and dairy auxiliary materials by MPN method
VDLUFA VI M 7.18.4 1988	Determination of sulphite-reducing anaerobic spore formers in milk and dairy products by MPN method
MUVA-MET522 2021-01	Determination of coliforms in meat and meat products by pour plate method
MUVA-MET541 2011-07	Determination of gas-forming yeasts in milk, dairy products, and dairy auxiliary materials by titre method
MUVA-MET551 2011-07	Determination of mesophilic gas-forming streptococci in milk, dairy products, and dairy auxiliary materials by titre method
MUVA-MET552 2020-11	Detection and count of thermophilic microorganisms in foodstuffs and animal feed by pour plate method
MUVA-MET594_30 2020-11	Enumeration of microorganisms after incubation (15 days/30°C) in UHT and sterilized milk by pour plate method

MUVA-MET594_55 2020-11	Enumeration of microorganisms after incubation (7 days/55°C) in UHT and sterilized milk by pour plate method
MUVA-MET5b34 2020-11	Examination of foodstuffs - Horizontal method for the determination of the mesophilic anaerobic total plate count

2.5 Microbiological examinations of environmental samples, fitment and utensils along the food chain

DIN ISO 18593 2018-10	Microbiology of the food chain - Horizontal methods for surface sampling

2.6 Performance testing of culture media

DIN EN ISO 11133 2020-10	Microbiology of food, animal feed and water - Preparation, production, storage and performance testing of culture media

2.7 Molecular biological examinations in foodstuffs, animal feed, dairy auxiliary materials, products of primary production, environmental samples in the food and feed sector, fitments in the food sector as well as from the primary production

2.7.1 Determination of bacteria and somatic cells by real-time PCR in foodstuffs, animal feed, dairy auxiliary materials, products of primary production, environmental samples in the food and feed sector, fitments in the food sector as well as from the primary production**

Biotecon Diagnostics foodproof® *Listeria monocytogenes* and *Listeria Genus* Detection Kit Order No. R30023 2017-09	Detection of Listeria monocytogenes and Listeria by real-time PCR
Biotecon Diagnostics foodproof® *Listeria monocytogenes* and *Listeria Genus* Detection Kit Order No. R30220 2017-03	Detection of Listeria monocytogenes and Listeria by real-time PCR

Biotecon Diagnostics foodproof® *Salmonella* Detection Kit Hybridization and 5'Nuclease Order No. R31027 and R30227 2017-03	Detection of Salmonella by real-time PCR in foodstuffs
Biotecon Diagnostics foodproof® Enterobacteriaceae plus Cronobacter Detection Kit Order No. R31015.1 2017-09	Detection of Cronobacter spp. by real-time PCR in foodstuffs
Biotecon Diagnostics foodproof® *STEC Screening* LyoKit Order No. R60211-1/R60211-2 2017-03	Detection of shiga-toxin producing Escherichia coli (STEC) by real-time PCR
Biomérieux Gene-UP® Cronobacter (CRO) REF 421920 2017-11	Detection of Cronobacter in foodstuffs, animal feed, and environmental samples
Biomérieux Gene-UP® Listeria spp. 2 (LIS 2) REF 423106 2018-06	Detection of Listeria in foodstuffs, animal feed, and environmental samples
Biomérieux Gene-UP® Salmonella 2 (SLM 2) REF 423105 2018-06	Detection of Salmonella in foodstuffs, animal feed, and environmental samples
MUVA-MET640 2016-12	Microbiology of the food chain - Polymerase chain reaction (PCR) for the detection of pathogenic microorganisms in foodstuffs - detection of botulinum neurotoxin type A, B, E, and F producing clostridia
MUVA-MET651 2018-01	Typing of bovine beta-casein genome (A1/A2) in milk by real-time PCR

2.7.2 Determination of GMO by real-Time PCR in foodstuffs, animal feed, dairy auxiliary materials, products of primary production, environmental samples in the food and feed sector, fitments in the food sector as well as from the primary production *

Biotecon Diagnostics foodproof® GMO Screening 1 LyoKit Order No. R60217-1/R60217-2 2017-03	Detection of genetically modified organisms (GMO/GVO) by real-time PCR (35S; T-NOS; P-FMV)
Biotecon Diagnostics foodproof® GMO Screening 2 LyoKit Order No. R60218-1/R60218-2 2017-03	Detection of genetically modified organisms (GMO/GVO) by real-time PCR (bar; P-35-pat; CTP2-CP4-EPSPS; P-NOS-nptII; P-35-nptII)
Biotecon Diagnostics foodproof® GMO Soya Quantification Kit Order No. R30219 2017-03	Quantification of Roundup Ready 1 (GTS 40-3-2) soya by real-time PCR
Biotecon Diagnostics foodproof® GMO RR 2 Yield Soya Quantification Kit Order No. R30235 2017-03	Quantification of Roundup Ready 2 soya by real-time PCR
Biotecon Diagnostics foodproof® SL GMO A2704-12 Soya Detection Kit Order No. Z72201 2015-07	Detection of A2704-12 soya by real-time PCR
Biotecon Diagnostics foodproof® SL GMO MON810 Maize Detection Kit Order No. Z72003 2016-10	Detection of MON810 corn by real-time PCR
Biotecon Diagnostics foodproof® SL GMO MON89034 Maize Detection Kit Order No. Z72008 2018-10	Detection of MON89034 corn by real-time PCR

Biotecon Diagnostics foodproof® SL GMO NK603 Maize Detection Kit Order No. Z72009 2016-10	Detection of NK603 corn by real-time PCR
Biotecon Diagnostics foodproof® Soya Detection Kit Order No. R30261 2014-10	Quantification of soya mass by real-time PCR
CONGEN / r-biopharm SureFood® GMO ID 4plex Canola I Item No. S2166 2017-02	Detection of MS8/GT73/T45 rapeseed by real-time PCR
Eurofins GeneScan GMOQuant Event A2704-12 Soy (LR) Cat. No. 5125206801 2018-02	Quantification of A2704-12 soya by real-time PCR
Eurofins GeneScan GMOIdent RT (IPC) Event TC1507 Corn Cat. No. 5421222401 2017-11	Detection of TC1507 corn by real-time PCR
Eurofins GeneScan GMOQuant (LR) Event TC1507 Corn Cat. No. 5125209301 2016-01	Quantification of TC1507 corn by real-time PCR
Eurofins GeneScan GMOQuant (LR) Event MON810 Corn Cat. No. 5125207801 2017-12	Quantification of MON810 corn by real-time PCR
Eurofins GeneScan GMO Quant (LR) Event MON89034 Corn Cat. No. 5125206701 2016-01	Quantification of MON89034 corn by real-time PCR

Eurofins GeneScan GMOQuant (LR) Event NK603 Corn Cat. No. 5125204401 2018-01	Quantification of NK603 corn by real-time PCR
Eurofins GeneScan GMOQuant (LR) Event Bt11 Corn Cat. No. 5125206501 2017-12	Quantification of Bt11 corn by real-time PCR
Eurofins GeneScan GMOQuant (UMM) Event Rf3 Rapeseed Cat. No. 5125209101 2018-05	Quantification of Rf3 rapeseed by real-time PCR
Eurofins GeneScan GMOQuant (UMM) Event T45 Rapeseed Cat. No. 5125208401 2017-12	Quantification of T45 rapeseed by real-time PCR
Eurofins GeneScan GMOQuant (UMM) Event RT73 Rapeseed Cat. No. 5125208901 2017-12	Quantification of RT73 (GT73) rapeseed by real-time PCR
Eurofins GeneScan GMOQuant (UMM) Event MS8 Rapeseed Cat. No. 5125209001 2017-09	Quantification of MS8 rapeseed by real-time PCR
Eurofins GeneScan GMOScreen RT Cry 1Ab/Ac (UMM) Cat. No. 5421225201 2018-07	Detection of Cry1Ab/Ac by real-time PCR
Eurofins GeneScan GMOIdent RT Event A5547-127 Soy (UMM) Cat. No. 5421223701 2018-07	Detection of A5547-127 soya by real-time PCR

Eurofins GeneScan GMOQuant (UMM) Event A5547-127 Soy Cat. No. 5125220601 2017-10	Quantification of A5547-127 soya by real-time PCR

2.8 Identification of microorganisms by FTIR spectroscopy

MUVA-MET5b07 2015-06	Identification of bacteria and yeasts by FTIR spectroscopy

2.9 Identification of microorganisms by MALDI-TOF mass spectroscopy

MUVA-MET645 2020-01	Identification of bacteria and yeasts by MALDI-TOF mass spectroscopy

2.10 Detection of inhibitory substances and residues of veterinary medicinal products by agar diffusion method in milk, milk powder and feed milk *

DSM Delvotest® SP NT supplement: 0001 2014-12	Determination of inhibitory substances in milk and milk powder by DELVO test SP *(deviation: application also for feed milk)*
AIM GmbH Munich BRT hi-sense Order No. 3131 2020-08	Determination of inhibitory substances and residues of veterinary medicinal products in milk by Brilliant Black Reduction Test (BRT) hi-sense *(deviation: application also for feed milk)*

2.11 Sensory examination of foodstuffs

2.11.1 Sensory examination of foodstuffs by special sensory tests **

DIN EN ISO 4120 2007-10	Sensory analysis - Methodology - Triangle test
DIN EN ISO 5495 2007-10	Sensory analysis - Methodology - Paired comparison test
DIN EN ISO 13299 2016-09	Sensory analysis - Methodology - General guidance for establishing a sensory profile
DIN ISO 8587 2010-08	Sensory analysis - Methodology - Ranking
DIN ISO 22935-2 2012-12	Milk and milk products - Sensory analysis - Part 2: Recommended methods for sensory evaluation
DIN 10964 2014-11	Sensory analysis - Simple descriptive test
DIN 10973 2013-06	Sensory analysis - In/out test
DIN 10975 2005-04	Sensory analysis - Expert witness for the judgement of conformity with foodlaw *(Restriction: here only sensory test)*
DLG 5-point-scheme® 9th edition 2019 p. 74, 75	Sensory analysis of butter, butter preparations, dairy spreads and dairy spread preparations according to DLG 5-point-schemes®
DLG 5-point-scheme® 9th edition 2019 p. 81-95	Sensory analysis of cheese, cream cheese, processed cheese, and other cheese preparations as well as convenience cheese according to DLG 5-point-schemes®
DLG 5-point-scheme® 9th edition 2019 p. 72, 76, 77, 79	Sensory analysis of milk, milk powder, and other milk powder preparations, cream, whipped cream, spray cream, and milk foam according to DLG 5-point-schemes®
DLG 5-point-scheme® 9th edition 2019 p. 73, 78-80, 96-98, 100, 101	Sensory analysis of other milk and dessert products as well as dairy drinks, sour dairy products, dessert preparations, condensed milk, coffee cream, and ice cream according to DLG 5-point-schemes®

DLG 5-point-scheme® 9th edition 2019 p. 96	Visual examination (flocculation) of coffee cream and condensed milk cream according to DLG 5-point-schemes®
DLG 5-point-scheme® 9th edition 2019 p. 94	Visual examination (whey drainage) of cream cheese and cream cheese preparations according to DLG 5-point-schemes®
DLG 5-point-scheme® 9th edition 2019 p. 64	Sensory analysis of corned beef, beef, and pork preserved in its own juice according to DLG 5-point-schemes®
DLG 5-point-scheme® 9th edition 2019 p. 66	Sensory analysis of boiled ham, salt meat, roast, and tongue according to DLG 5-point-schemes®
DLG 5-point-scheme® 9th edition 2019 p. 63	Sensory analysis of cooked sausage, cooked sausage pastries, aspic i. a. according to DLG 5-point-schemes®
DLG 5-point-scheme® 9th edition 2019 p. 60	Sensory analysis of raw sausage (cuttable and spreadable) according to DLG 5-point-schemes®
DLG 5-point-scheme® 9th edition 2019 p. 61	Sensory analysis of raw ham, rolled filet of ham, bacon, and smoked meat according to DLG 5-point-schemes®
DLG 5-point-scheme® 9th edition 2019 p. 65	Sensory analysis of lard according to DLG 5-point-schemes®
DLG 5-point-scheme® 9th edition 2019 p. 62	Sensory analysis of boiled sausage, boiled sausage pastries, meat loaf, and filled products according to DLG 5-point-schemes®
MUVA-MET723 2018-01	Sensory analysis of rapeseed oil

2.11.2 Sensory examination of foodstuffs by simple descriptive test *

DIN 10964 2014-11	Sensory analysis – Simple descriptive test
DIN 10975 2005-04	Sensory analysis – Expert witness for the judgement of conformity with foodlaw *(Restriction: here only sensory test)*

3 Examination of packaging material in the food sector

3.1 Chemical examination of packaging materials for halogenated compounds by flame colouration

MUVA-MET919 2017-10	Qualitative determination of halogenated compounds (PVC, PVdC) in foodstuff commodities (food packaging/packaging material) (Beilstein test)

3.2 Determination of bacteria, moulds and yeast by cultural microbiological testing of packaging materials **

MUVA-MET598 2019-03	Determination of surface microbial count on packaging materials of food and animal feed production environment by swab technique
IVV Merkblätter für die Prüfung von Packmitteln, Merkblatt 21, S. D13-15 1974-03	Determination of surface microbial count (bacteria, moulds, yeasts, and coliforms) on non-absorbent packaging material
IVV Merkblätter für die Prüfung von Packmitteln, Merkblatt 19, S. D17-21 1974-01	Determination of total bacterial count, count of moulds and yeasts, and count of coliforms in bottles and comparably narrow necked containers
IVV Merkblätter für die Prüfung von Packmitteln, Merkblatt 15, S. D23-26 1972-07	Determination of total bacterial count, count of moulds and yeasts, and count of coliforms in prefabricated packaging material-overlayer technique or swab technique

3.3 Sensory examination by special sensory analyses of packaging material *

DIN EN 1230-1 2010-02	Paper and board intended to come into contact with foodstuffs - Sensory analysis - Part 1: Odour
DIN EN 1230-2 2018-10	Paper and board intended to come into contact with foodstuffs - Sensory analysis - Part 2: Off-flavour (taint)
DIN 10955 2004-06	Sensory analysis - Testing of packaging materials and packages for foodstuffs
DIN 55534 2006-08	Testing of taste transfer from packages and packaging materials through the head space using water as the test medium

4 Test methods in accordance with the German Drinking Water Ordinance - TrinkwV

Sampling

Method	Title
DIN EN ISO 5667-1 (A 4) 2007-04	Water quality - Sampling - Part 1: Guidance on the design of sampling programmes and sampling techniques
DIN ISO 5667-5 (A 14) 2011-02	Water quality - Sampling - Part 5: Guidance on sampling of drinking water from treatment works and piped distribution systems
DIN EN ISO 5667-3 (A 21) 2013-03	Water quality - Sampling - Part 3: Preservation and handling of water samples
DIN EN ISO 19458 (K 19) 2006-12	Water quality - Sampling for microbiological analysis
Recommendation of the Federal Environment Agency 18th December 2018	Evaluation of the quality of drinking water with regard to the parameters lead, copper, and nickel

ANNEX 1: MICROBIOLOGICAL PARAMETERS

PART I: General requirements for drinking water

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

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

Ser. no.	Parameter	Method
1	Escherichia coli (E. coli)	DIN EN ISO 9308-1 (K 12) 2017-09 DIN EN ISO 9308-2 (K 6-1) 2014-06
2	Enterococci	DIN EN ISO 7899-2 (K 15) 2000-11
3	Pseudomonas aeruginosa	DIN EN ISO 16266 (K 11) 2008-05

ANNEX 2: CHEMICAL PARAMETERS

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

Ser. no.	Parameter	Method
1	Acrylamide	not covered
2	Benzene	DIN 38407-F 43 2014-10
3	Boron	DIN EN ISO 17294-2 (E 29) 2017-01
4	Bromate	MUVA-MET491 2020-12
5	Chromium	DIN EN ISO 17294-2 (E 29) 2017-01
6	Cyanide	DIN 38405-D 13 2011-04
7	1,2-dichlorethane	DIN 38407-F 43 2014-10
8	Fluoride	DIN 38405-D 4 1985-07 DIN EN ISO 10304-1:2009-07 (D 20)
9	Nitrate	DIN 38405-D 9 2011-09 DIN EN ISO 10304-1:2009-07 (D 20)
10	Pesticide active ingredients and biocide active ingredients	DIN EN ISO 11369 (F 12) 1997-11 deviation: measurement by LC-MS/MS
11	Total pesticide active ingredients and biocide active ingredients	DIN EN ISO 11369 (F 12) 1997-11 deviation: measurement by LC-MS/MS
12	Mercury	DIN EN ISO 17294-2 (E 29) 2017-01
13	Selenium	DIN EN ISO 17294-2 (E 29) 2017-01
14	Tetrachloroethene and trichloroethene	DIN EN ISO 10301 (F 4) 1997-08
15	Uranium	DIN EN ISO 17294-2 (E 29) 2017-01

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

Ser. no.	Parameter	Method
1	Antimony	DIN EN ISO 17294-2 (E 29) 2017-01
2	Arsenic	DIN EN ISO 17294-2 (E 29) 2017-01
3	Benzo-(a)-pyrene	MUVA-MET448 GC-MS 2020-12
4	Lead	DIN EN ISO 17294-2 (E 29) 2017-01
5	Cadmium	DIN EN ISO 17294-2 (E 29) 2017-01
6	Epichlorohydrin	not covered
7	Copper	DIN EN ISO 17294-2 (E 29) 2017-01
8	Nickel	DIN EN ISO 17294-2 (E 29) 2017-01

Ser. no.	Parameter	Method
9	Nitrite	DIN EN 26777 (D 10) 1993-04 DIN EN ISO 10304-1:2009-07 (D 20)
10	Polycyclic aromatic hydrocarbons (PAH)	MUVA-MET448 GC-MS 2020-12
11	Trihalogmethanes (THM)	DIN EN ISO 10301 (F 4) 1997-08
12	Vinyl chloride	not covered

ANNEX 3: INDICATOR PARAMETERS

PART I: General indicator parameters

Ser. no.	Parameter	Method
1	Aluminium	DIN EN ISO 17294-2 (E 29) 2017-01
2	Ammonium	DIN 38406-E 5 1983-10
3	Chloride	DIN 38405-D 1 1985-12 DIN EN ISO 10304-1:2009-07 (D 20)
4	Clostridium perfringens (incl. spores)	DIN EN ISO 14189 (K 24) 2016-11
5	Coliform bacteria	DIN EN ISO 9308-1 (K 12) 2017-09
6	Iron	DIN EN ISO 17294-2 (E 29) 2017-01
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
9	Taste	DIN EN 1622 (B 3) 2006-10
10	Colony count at 22 °C	DIN EN ISO 6222 (K 5) 1999-07 TrinkwV §15 paragraph (1c)
11	Colony count at 36 °C	DIN EN ISO 6222 (K 5) 1999-07 TrinkwV §15 paragraph (1c)
12	Conductivity	DIN EN 27888 (C 8) 1993-11
13	Manganese	DIN EN ISO 17294-2 (E 29) 2017-01
14	Sodium	DIN EN ISO 17294-2 (E 29) 2017-01
15	Total organic carbon (TOC)	not covered
16	Oxidizability	DIN EN ISO 8467 (H 5) 1995-05
17	Sulphate	DIN 38405-D 5 1985-01 DIN EN ISO 10304-1:2009-07 (D 20)
18	Turbidity	DIN EN ISO 7027-1: 2016-11 (C 2)
19	Hydrogen ion concentration	DIN EN ISO 10523 (C 5) 2012-04
20	Calcite dissolution capacity	DIN 38404-C 10 2012-12

PART II: Specific requirements for drinking water in drinking water installations

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

ANNEX 3a: Requirements for drinking water regarding radioactive substances
Not covered

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

Parameter	Method
Calcium	DIN EN ISO 17294-2 (E 29) 2017-01
Potassium	DIN EN ISO 17294-2 (E 29) 2017-01
Magnesium	DIN EN ISO 17294-2 (E 29) 2017-01
Acid and base capacity	DIN 38409-H 7 2005-12
Phosphate	DIN EN ISO 6878 (D11) 2004-09

The accreditation does not replace the recognition or approval process of the responsible authority according to § 15 paragraph (4) TrinkwV.

5 Sampling and microbiological examinations of industrial water according to §3 paragraph 8 42. BImSchV

Sampling

Method	Title
DIN EN ISO 19458 (K 19) 2006-12	Water quality - Sampling for microbiological examinations
	Recommendation of the Federal Environmental Agency for the sampling and detection of Legionella in evaporative cooling systems, cooling towers, and wet separators of 6th March 2020, sections C and D

Microbiological examinations

Parameter	Method
Legionella	DIN EN ISO 11731 (K 23) 2019-03
	Recommendation of the Federal Environment Agency for the sampling and detection of legionella in evaporative cooling systems, cooling towers, and wet separators of 6th March 2020, sections E and F including annexes 1 and 2
Colony count at 22°C and 36 °C	DIN EN ISO 6222 (K 5) 1999-07

6 TEST METHOD LIST FOR THE SPECIALIST MODULE FOR WATER

Revision: LAWA from 18.10.2018

Section 1: Sampling and general parameters

Not covered

Section 2: Photometry, ion chromatography, titrimetry

Parameter	Method	Waw	Suw	Grw
UV absorption at 254 nm (SAK 254)	DIN 38404-C 3: 2005-07		☐	☒
UV absorption at 436 nm (SAK 436)	DIN EN ISO 7887: 2012-09 (C 1), Method B	☐	☐	☒
Ammonia nitrogen	DIN EN ISO 11732: 2005-05 (E 23)	☐	☐	☐
	DIN 38406-E 5: 1983-10	☐	☐	☒
	DIN EN ISO 14911: 1999-12 (E 34)		☐	☐
	DIN ISO 15923-1: 2014-07 (D 49)	☐	☐	☐
Nitrite nitrogen	DIN EN 26777: 1993-04 (D 10)	☐	☐	☐
	DIN EN ISO 10304-1: 2009-07 (D 20)	☐	☐	☒
	DIN EN ISO 13395: 1996-12 (D 28)	☐	☐	☐
	DIN ISO 15923-1: 2014-07 (D 49)	☐	☐	☐
Nitrate nitrogen	DIN EN ISO 10304-1: 2009-07 (D 20)	☐	☐	☒
	DIN EN ISO 13395: 1996-12 (D 28)	☐	☐	☐
	DIN 38405-D 9: 2011-09	☐	☐	☐
	DIN 38405-D 29: 1994-11		☐	☐
	DIN ISO 15923-1: 2014-07 (D 49)	☐	☐	☐
Total phosphorus *(See also section 3)*	DIN EN ISO 6878: 2004-09 (D 11)	☐	☐	☐
	DIN EN ISO 15681-1: 2005-05 (D 45)	☐	☐	☐
	DIN EN ISO 15681-2: 2005-05 (D 46)	☐	☐	☐
Orthophosphate	DIN EN ISO 10304-1: 2009-07 (D 20)		☐	☐
	DIN EN ISO 6878: 2004-09 (D 11)		☐	☒
	DIN EN ISO 15681-1: 2004-07 (D 45)		☐	☐
	DIN EN ISO 15681-2: 2005-05 (D 46)		☐	☐
	DIN ISO 15923-1: 2014-07 (D 49)		☐	☐
Fluoride (dissolved)	DIN 38405-D 4-1, 1985-07	☐	☐	☐
	DIN EN ISO 10304-1: 2009-07 (D 20)	☐	☐	☐
Chloride	DIN EN ISO 10304-1: 2009-07 (D 20)	☐	☐	☒
	DIN EN ISO 15682: 2002-01 (D 31)	☐	☐	☐
	DIN ISO 15923-1: 2014-07 (D 49)	☐	☐	☐
	DIN EN ISO 10304-4: 1999-07 (D 25)			☐
	DIN 38405-D 1-1 and D 1-2: 1985-12	☐	☐	☐
	DIN 38405-D 1-3 and D 1-4: 1985-12	☐	☐	☐

Parameter	Method	Waw	Suw	Grw
Sulphate	DIN EN ISO 10304-1: 2009-07 (D 20)	☐	☐	☒
	DIN 38405-D 5-1: 1985-01	☐	☐	☐
	DIN 38405-D 5-2: 1985-01	☐	☐	☐
	DIN ISO 15923-1: 2014-07 (D 49)	☐	☐	☐
Cyanide (easily released)	DIN 38405-D 13-2: 1981-02	☐	☐	☐
	DIN EN ISO 14403-1: 2012-10 (D 2)	☐	☐	☐
	DIN EN ISO 14403-2: 2012-10 (D 3)	☐	☐	☐
	DIN 38405-D 7: 2002-04		☐	☐
Cyanide (total)	DIN 38405-D 13-1: 1981-02	☐	☐	☐
	DIN EN ISO 14403-1: 2012-10 (D 2)	☐	☐	☐
	DIN EN ISO 14403-2: 2012-10 (D 3)	☐	☐	☐
	DIN 38405-D 7: 2002-04		☐	☐
Chromium VI	DIN 38405-D 24: 1987-05	☐	☐	☐
	DIN EN ISO 10304-3: 1997-11 (D 22), section 6 (dissolved chromate)	☐	☐	☐
	DIN EN ISO 23913: 2009-09 (D 41)	☐	☐	☐
	DIN EN ISO 18412: 2007-02 (D 40)			☐
Sulphide (easily released)	DIN 38405-D 27: 1992-07	☐	☐	☐

Section 3: Elemental analysis

Parameter	Method	Waw	Suw	Grw
Aluminium	DIN EN ISO 11885: 2009-09 (E 22)	☐	☐	☐
	DIN EN ISO 12020: 2000-05 (E 25)	☐	☐	☐
	DIN EN ISO 17294-2: 2017-01 (E 29)	☐	☐	☒
	DIN EN ISO 15586: 2004-02 (E 4)		☐	☐
Arsenic	DIN EN ISO 11969: 1996-11 (D 18)	☐	☐	☐
	DIN EN ISO 11885: 2009-09 (E 22)	☐		
	DIN EN ISO 17294-2: 2017-01 (E 29)	☐	☐	☒
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐
	DIN 38405-D 35: 2004-09	☐	☐	☐
Lead	DIN EN ISO 11885: 2009-09 (E 22)	☐		
	DIN 38406-E 6: 1998-07	☐	☐	☐
	DIN EN ISO 17294-2: 2017-01 (E 29)	☐	☐	☐
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐
Cadmium	DIN EN ISO 11885: 2009-09 (E 22)	☐		
	DIN EN ISO 5961: 1995-05 (E 19)	☐	☐	☐
	DIN EN ISO 17294-2: 2017-01 (E 29)	☐	☐	☐
	DIN EN ISO 15586: 2004-02(E 4)	☐	☐	☐

Parameter	Method	Waw	Suw	Grw
Calcium	DIN EN ISO 11885: 2009-09 (E 22)		☐	☐
	DIN 38406-E 3: 2002-03		☐	☐
	DIN EN ISO 7980: 2000-07 (E 3a)		☐	☐
	DIN EN ISO 17294-2: 2017-01 (E 29)		☐	☒
	DIN EN ISO 14911: 1999-12 (E 34)		☐	☐
Chromium	DIN EN ISO 11885: 2009-09 (E 22)	☐	☐	☐
	DIN EN 1233: 1996-08 (E 10)	☐	☐	☐
	DIN EN ISO 17294-2: 2017-01 (E 29)	☐	☐	☐
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐
Iron	DIN EN ISO 11885: 2009-09 (E 22)	☐	☐	☐
	DIN 38406-E 32: 2000-05	☐	☐	☐
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐
	DIN EN ISO 17294-2: 2017-01 (E29)	☐	☐	☒
Potassium	DIN 38406-E 13: 1992-07		☐	☐
	DIN EN ISO 11885: 2009-09 (E 22)		☐	☐
	DIN EN ISO 17294-2: 2017-01 (E 29)		☐	☒
	DIN EN ISO 14911: 1999-12 (E 34)		☐	☐
Copper	DIN EN ISO 11885: 2009-09 (E 22)	☐	☐	☐
	DIN 38406-E 7: 1991-09	☐	☐	☐
	DIN EN ISO 17294-2: 2017-01 (E 29)	☐	☐	☐
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐
Manganese	DIN EN ISO 11885: 2009-09 (E 22)			☐
	DIN EN ISO 17294-2: 2017-01 (E 29)			☒
	DIN 38406-E 33: 2000-06			☐
	DIN EN ISO 15586: 2004-02 (E 4)			☐
	DIN EN ISO 14911: 1999-12 (E 34)			☐
Sodium	DIN 38406-E 14: 1992-07		☐	☐
	DIN EN ISO 11885: 2009-09 (E 22)		☐	☐
	DIN EN ISO 17294-2: 2017-01 (E 29)		☐	☒
	DIN EN ISO 14911: 1999-12 (E 34)		☐	☐
Nickel	DIN EN ISO 11885: 2009-09 (E 22)	☐	☐	☐
	DIN 38406-E 11: 1991-09	☐	☐	☐
	DIN EN ISO 17294-2: 2017-01 (E 29)	☐	☐	☐
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐
Mercury	DIN EN ISO 17852: 2008-04 (E 35)	☐	☐	☐
	DIN EN ISO 12846: 2012-08 (E 12)	☐	☐	☐
Zinc	DIN EN ISO 11885: 2009-09 (E 22)	☐	☐	☐
	DIN 38406-E 8: 2004-10	☐	☐	☐
	DIN EN ISO 17294-2: 2017-01 (E 29)	☐	☐	☐
	DIN EN ISO 15586: 2004-02 (E 4)	☐	☐	☐
Boron	DIN EN ISO 11885: 2009-09 (E 22)	☐	☐	☐
	DIN EN ISO 17294-2: 2017-01 (E 29)	☐	☐	☐

Parameter	Method	Waw	Suw	Grw
Magnesium	DIN EN ISO 11885: 2009-09 (E 22)		☐	☐
	DIN 38406-E 3: 2002-03		☐	☐
	DIN EN ISO 7980: 2000-07 (E 3a)		☐	☐
	DIN EN ISO 17294-2: 2017-01 (E 29)		☐	☒
	DIN EN ISO 14911: 1999-12 (E 34)		☐	☐
Total phosphorus *(See also section 2)*	DIN EN ISO 11885: 2009-09 (E 22)	☐	☐	☐
	DIN EN ISO 17294-2: 2005-02 (E 29)	☐	☐	☐

Section 4/5: Group and sum parameters

Parameter	Method	Waw	Suw	Grw
Biological oxygen demand (BSB_5)	DIN EN 1899-1: 1998-05 (H 51)	☐		
	DIN EN 1899-2: 1998-05 (H 52)		☐	
Chemical oxygen demand (CSB)	DIN 38409-H 41: 1980-12	☐		
	DIN 38409-H 44: 1992-05		☐	
	DIN ISO 15705: 2003-01 (H 45)		☐	
Phenol index	DIN 38409-H 16-2: 1984-06	☐	☐	☐
	DIN 38409-H 16-1: 1984-06		☐	☐
	DIN EN ISO 14402: 1999-12 (H 37) Method according to section 4	☐	☐	☐
Filterable solids	DIN EN 872: 2005-04 (H 33)	☐	☐	
	DIN 38409-H 2-3: 1987-03		☐	
Acid and base capacity	DIN 38409-H 7: 2005-12		☐	☒
Total organic carbon (TOC)	DIN EN 1484: 1997-08 (H 3)	☐	☐	
Dissolved organic carbon (DOC)	DIN EN 1484: 1997-08 (H 3)			☐
Total bound nitrogen (TN_b)	DIN EN 12260: 2003-12 (H 34)	☐	☐	
	DIN EN ISO 11905-1: 1998-08 (H 36)	☐	☐	
Adsorbable organic halogens (AOX)	DIN EN ISO 9562: 2005-02 (H 14)	☐	☐	☐

Section 6: Gas chromatographic methods
Not covered

Section 7: HPLC methods
Not covered

Section 8: Microbiological methods
Not covered

Section 9.1: Biological methods, biotests (part 1)
Not covered

Section 9.2: Biological methods, biotests (part 2)
Not covered

Abbreviations used:

ADPI	American Dry Products Institute
ASU	Official collection of analysis methods according to § 64 of the German Food and Feed Code (LFGB)
DAB	German Pharmacopoeia
DEV	German standard methods for the examination of water, waste water and sludge
DIN	German Institute for Standardisation
DLG	German Agricultural Society
DVGW	German Association for gas and water applications
DMA	Direct Mercury Analyzer
EG	European Community
EN	European norm
EUP	European Pharmacopoeia
GB	Guobiao standards (National Standard of the People's Republic of China)
IDF	International Dairy Federation
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
IVV	Fraunhofer Institute for process engineering and packaging
MUVA-MET	In-house method of muva kempten GmbH
SLMB	Swiss Book of Foodstuffs
TrinkwV	Drinking Water Ordinance
UBA	Federal Environment Agency
USP	United States Pharmacopeia (US drug and devide regulations)
VDLUFA	Association of German Agricultural Analytic and Research Institutes
VO	Regulation