

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-14076-01-00 according to DIN EN ISO/IEC 17025:2018

Valid from: 03.11.2023

Date of issue: 03.11.2023

Holder of accreditation certificate:

Eurofins CLF Specialised Nutrition Testing Services GmbH
Professor-Wagner-Straße 11, 61381 Friedrichsdorf

with the location

Eurofins CLF Specialised Nutrition Testing Services GmbH
Professor-Wagner-Straße 11, 61381 Friedrichsdorf

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 they conform to the general with the principles of DIN EN ISO 9001.

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>.

Annex to the Accreditation Certificate D-PL-14076-01-00

Tests in the fields:

Sensory, physical, physico-chemical, chemical, microbiological, immunological and molecular biological analysis of foodstuffs

Physical, physico-chemical, chemical, microbiological, immunological and molecular biological analysis of feedstuffs

Sampling, microbiological and molecular biological analysis of fitment and utensils in food production

Within the specified test fields, the testing laboratory is permitted to do the following without obtaining prior notification and consent from DAkkS GmbH

*** Freely select standard test methods or equivalent test methods.**

**** Modify test methods and develop new test methods.**

The test methods listed are given by way of example.

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

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

1 Foodstuffs

1.1 Physical, physico-chemical and chemical analysis

1.1.1 High performance liquid chromatography (LC)

1.1.1.1 Determination of ingredients, additives and contaminants by liquid chromatography (LC) with conventional detectors (HPAEC-PAD, RI, UV, FLD, DAD) in foodstuffs **

DIN EN 12822
2014-08

Foodstuffs – Determination of vitamin E by high performance liquid chromatography – Measurement of α -, β -, γ - and δ -tocopherols (Modification: *Calibration only for α -tocopherol, other solvent, saponification conditions simultaneous to vitamin A, single extraction and neutralisation, concentration in nitrogen stream, combined analysis with vitamin A*)

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 2 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

DIN EN 12823-1 2014-08	Foodstuffs – Determination of vitamin A by high performance liquid chromatography – Part 1: Measurement of all-E-retinol and 13-Z-retinol (Modification: <i>Different HPLC eluent, different solvent, combined detection of E-retinol and 13-Z-retinol, single extraction and neutralisation, concentration in nitrogen stream, combined analysis with vitamin E</i>)
DIN EN 14122 2014-08	Foodstuffs – Determination of vitamin B1 by high performance liquid chromatography (Modification: <i>Adapted reaction solution, adapted flow rate, extension of the calibration range, adapted hydrolysis conditions, adapted HPLC conditions, simultaneous measurement with vitamin B2 and B6</i>)
DIN EN 14148 2003-10	Foodstuffs – Determination of vitamin K1 by high performance liquid chromatography (Modification: <i>Adaptation of the mobile phase, stock solution and standard solutions, use of petroleum spirit instead of n-hexane, measurement of the sample extract in isopropanol instead of methanol, adaptation of extraction for encapsulated vitamin K1</i>)
DIN EN 14152 2014-08	Foodstuffs – Determination of vitamin B2 by high performance liquid chromatography (Modification: <i>Extension of the calibration range, adapted hydrolysis conditions, automated SPE pretreatment using C18 cartridge, adapted HPLC conditions, simultaneous measurement with vitamin B1 and B6</i>)
DIN EN 14663 2006-03	Foodstuffs – Determination of vitamin B6 (including glucosidic bound compounds) with HPLC (Modification: <i>Different mobile phase, extension of the calibration range, adapted hydrolysis conditions, automated SPE pretreatment using C18 cartridge, adapted HPLC conditions, simultaneous measurement with vitamin B1 and B2</i>)
AOAC 997.08 2013	Fructans in Food Products (Ion Exchange Chromatographic Method) (Modification: <i>Glucose is taken into account mathematically, other eluent composition, shortened gradient programme</i>)
AOAC 2011.20 2014	5'-Mononucleotides in Infant Formula and Adult/ Pediatric Nutritional Formula (Modification: <i>Precipitation of proteins with 5 ml acetic acid (0.5%), elution of analytes with larger volumes of phosphate buffer</i>)

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 3 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

AOAC 2014.02 2014	Determination of vitamin B12 in selected foodstuffs and feedstuffs by HPLC (Modification: <i>Matrix also selected foodstuffs, adjustment of the calibration range, adjustment of sample weight and dilutions, no standard solution, use of incubation buffer, adapted sample preparation for samples with high mineral content, consideration of immunoaffinity column recovery rate, adapted HPLC conditions</i>)
ASU L 26.00-1 2016-03	Analysis of foodstuffs – Determination of nitrate content in vegetables and vegetable products (Restriction: <i>HPLC method only</i>)
ASU L 49.07-1 1985-05	Analysis of foodstuffs; Determination of amino acids in amino acid mixtures (Modification: <i>Matrix also dietary foods; analytes are only free amino acids</i>)
ASU L 49.07-2 1986-11	Analysis of foodstuffs; Determination of the amino acid content in dietary foods on the basis of protein hydrolyzates (Modification: <i>Matrix also other dietary foods; reagent amounts and hydrolysis conditions optimised, neutralisation instead of rotation after hydrolysis</i>)
ASU L 49.07-3 1989-05	Analysis of foodstuffs; Determination of the tryptophan content in dietary foods on the basis of protein hydrolyzates (Modification: <i>Matrix also dietary foodstuffs; sample tube not evacuated before hydrolysis, sample dissolved in acid buffer after hydrolysis & neutralisation</i>)
CLF SOP 522-01 2020-02	Determination of mono and disaccharides in dietary foods by HPLC-RI
CLF SOP 522-05 2020-02	Determination of the content of galactooligosaccharides (GOS) in infant milk, base powders for their preparation and solid amino acid-based FSMP by high performance anion exchange chromatography with pulsed amperometric detection (HPAEC-PAD)
CLF SOP 522-07 2021-11	Determination of 2-fucosyllactose and lacto-N-neotetraose in selected foodstuffs by HPAEC-PAD
CLF SOP 522-08 2023-01	Determination of 3-fucosyllactose, 2'-fucosyllactose, lacto-N-tetraose, lacto-N-triose II, 6'-sialyllactose and 3'-sialyllactose in foodstuffs with higher levels of human milk oligosaccharides by HPAEC-PAD
CLF SOP 523-07 2022-07	Determination of retinol acetate, retinol palmitate and d,l-alpha-tocopheryl acetate in selected foodstuffs by HPLC-UV

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 4 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

CLF SOP 524-03 2020-02	Determination of niacin in selected dietary foodstuffs by HPLC-UV
CLF SOP 524-05 2020-02	Determination of vitamin B12 in selected foodstuffs by HPLC-UV after clean-up on an immunoaffinity column
CLF SOP 524-07 2020-02	Determination of biotin in selected foodstuffs by HPLC-FD after clean-up on an immunoaffinity column
CLF SOP 524-10 2020-02	Determination of L-ascorbic acid (vitamin C) in selected foodstuffs (including foods for infants and young children) by HPLC-UV
CLF SOP 524-14 2022-07	Quantitative determination of vitamin B1, B2, B3 and B6 in premixes for human and animal food by HPLC-UV
CLF SOP 525-01 2020-02	Determination of the total cystine content in selected foods by means of an amino acid analyser
CLF SOP 525-02 2020-02	Determination of the content of taurine in dietary foods and vitamin premixes by means of an amino acid analyser
CLF SOP 532-01 2020-02	Determination of aflatoxin M1 in milk and milk products (baby food) by HPLC-FLD after clean-up on an immunoaffinity column
CLF SOP 532-04 2022-02	Determination of ochratoxin A and aflatoxin B1, B2, G1 and G2 in baby food, cereals and cocoa by HPLC-FLD after clean-up on an immunoaffinity column

1.1.1.2 Determination of ingredients, additives, plant protection product residues and contaminants by liquid chromatography (LC) with mass selective detectors (MS/MS) in foodstuffs **

DIN EN 15662 2009-02	Foods of plant origin – Determination of pesticide residues using GC-MS and/or LC-MS/MS after acetonitrile extraction/partitioning and clean-up by dispersive SPE – QuEChERS-method (Modification: <i>SPE conditions changed, quantification using internal standard</i>)
AOAC 2012.16 2015	Pantothenic Acid (Vitamin B5) in Infant Formula and Adult/Pediatric Nutritional Formula (Modification: <i>Matrix also selected foodstuffs, extension of the calibration range, adjustment of weights and dilutions, addition of enzymes</i>)

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 5 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

AOAC 2013.13 2013	Folate in Infant Formula and Adult/Pediatric Nutritional Formula (Modification: <i>Adapted sample preparation, different separation column, different eluent, modified gradient</i>)
AOAC 2016.05 2016	Fortified milk powders, infant milk formula, and adult nutritionals - Determination of vitamin D by liquid chromatography-mass spectrometry (Modification: <i>Matrix also selected foodstuffs, dissolution of derivatisation reagent in acetonitrile instead of acetone</i>)
CLF SOP 524-06 2020-02	Determination of carnitine in milk and milk products (including baby food) by LC-MS/MS
CLF SOP 524-13 2022-07	Quantitative determination of vitamin B1, B2, B3, B5 and B6 in selected foods by LC-MS/MS
CLF SOP 524-16 2022-06	Quantitative determination of folic acid and folates in dietary foodstuffs and food supplements with LC-MS/MS
CLF SOP 531-06 2020-02	Determination of ETU and PTU in fruits, vegetables, cereals and baby food by LC-MS/MS
CLF SOP 531-10 2020-02	Determination of chlormequat and mepiquat in fruit and vegetables by LC-MS/MS
CLF SOP 532-03 2020-02	Determination of deoxynivalenol, zearalenone, T-2 toxin and HT-2 toxin, by LC-MS/MS in baby food and raw materials for their preparation, such as cereals and ZEA in oils
CLF SOP 532-05 2020-02	Determination of fumonisin B1 and B2 toxin by LC-MS/MS in maize
CLF SOP 532-06 2020-02	Determination of alternarial toxins (AOH, AME, ALT, TEN, TEA) in cereal and cereal products as well as in juices and purees
CLF SOP 532-07 2020-02	Determination of patulin in fruit preparations by UHPLC-MS/MS
CLF SOP 535-01 2020-02	Determination of melamine and cyanuric acid in milk powder and infant formula by LC-MS/MS
CLF SOP 535-04 2020-02	Determination of quaternary ammonium compounds in selected foodstuffs by LC-MS/MS
CLF SOP 535-05 2022-02	Determination of chlorate and perchlorate in selected foodstuffs by LC-MS/MS

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 6 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

1.1.2 Gas chromatography (GC)

1.1.2.1 Determination of ingredients, additives and plant protection product residues by gas chromatography (GC) with conventional detectors (FID, FPD) in foodstuffs **

NHFPC GB 5413.25 2010-03	National food safety standard for the determination of inositol in food intended for infants and children, milk and milk products (Modification: <i>Blow-off of the solvent adapted; derivatisation in the heater block; adapted chromatography conditions</i>)
CLF SOP 524-09 2022-08	Determination of free myo-inositol in selected foodstuffs by GC-FID
CLF SOP 527-02 2020-02	Qualitative and quantitative determination of fatty acids in foodstuffs by capillary gas chromatography (GC-FID)

1.1.2.2 Determination of plant protection product residues and contaminants by gas chromatography with mass spectrometry (GC-MS) in foodstuffs **

DIN EN 12393-3 2014-01	Foods of plant origin – Multiresidue methods for the determination of pesticide residues by GC or LC-MS/MS - Part 3: Determination and confirmatory tests
CLF SOP 531-01 2020-02	Multiresidue methods for gas chromatographic determination of pesticide residues in animal foodstuffs and fats (GC-MS)
CLF SOP 531-05 2020-06	Determination of acidic herbicides in selected foodstuffs by GC/MS
CLF SOP 535-03 2020-02	Determining polycyclic aromatic hydrocarbons in foodstuffs by GC-GC/MS
CLF SOP 537-01 2022-03	Determination of MCPD esters and glycidyl esters in fats, oils and milk powder (including baby food), liquid milk and jarred products by GC-MS
CLF SOP 537-02 2020-02	Determination of MCPD esters and glycidylestern in fats and oils by GC-MS

Annex to the Accreditation Certificate D-PL-14076-01-00

1.1.3 Determination of elements by atomic absorption spectrophotometry (CV, GF-AAS) in foodstuffs **

CLF SOP 533-01 2020-02	Determination of lead and cadmium in dietary foods b solid AAS
CLF SOP 533-02 2020-01	Determination of mercury in foodstuffs by cold-vapour atomic absorption spectrometry (AAS) after pressure digestion
CLF SOP 533-03 2020-02	Determination of aluminium in selected foods by solid AAS

1.1.4 Determination of elements by atomic emission spectrometry with inductively coupled plasma (ICP-OES) in foodstuffs **

DIN EN 16943 2017-07	Foodstuffs – Determination of elements and their chemical species – Determination of minerals by ICP-OES (Restriction: <i>No analysis of sulphur, no ionisation buffers</i>)
CLF SOP 533-06 2020-02	Determination of inorganic arsenic in cereals and oils by hydride ICP-OES after acid extraction
CLF SOP 533-09 2020-06	Determination of aluminium in selected foodstuffs using ICP-OES

1.1.5 Determination of elements by inductively coupled plasma mass spectrometry (ICP-MS) in foodstuffs **

DIN EN ISO 21424 2020-10	Milk, milk products, infant formula and adult nutritionals – Determination of minerals and trace elements – Inductively coupled plasma mass spectrometry (ICP-MS) method (Restriction: <i>No analysis of Ca, Cu, Fe, Mg, P, K, Na; modification: Extension of the analysis parameters to include As and Ni, digestion adapted to microwave</i>)
DIN EN 15111 2007-06	Foodstuffs – Determination of trace elements – Determination of iodine by ICP-MS (mass spectrometry with inductively coupled plasma) (Modification: <i>Modified internal standard</i>)
CLF SOP 526-11 2023-01	Determination of trace elements and toxic metals in selected foodstuffs and feedstuffs after pressure digestion by ICP-MS (Restriction: <i>Here for foodstuffs</i>)

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 8 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

1.1.6 Determination of ingredients and characteristics by gravimetry in foodstuffs **

DIN EN ISO 5537 2004-09	Determination of water content in milk powder (Modification: <i>Use of other sample containers</i>)
DIN 10342 2021-11	Determination of fat content of milk and milk products by the Weibull-Berntrop gravimetric method (Modification: <i>Matrix also foodstuffs; adaptation to implementation in a fully automatic hydrolysis and extraction device</i>)
ASU L 02.06-E (EG) and 1 (EG) to 8 (EG) Method 2 1981-01	Analytical methods relating to the composition of certain partly or wholly dried, preserved milk products; Determination of dry content, drying oven 102 °C (Modification: <i>Matrix also foodstuffs</i>)
ASU L 06.00-7 2014-08	Analysis of foodstuffs – Determination of raw protein content in meat and meat products – Kjeldahl titrimetric method – Reference method (Modification: <i>Matrix also fish/fish products, oil seeds and fruit/vegetable products</i>)
ASU L 17.00-3 1982-05	Determination of ash in bread including small baked products made of bread dough (Modification: <i>Matrix also foodstuffs</i>)
ASU L 17.00-15 2013-08	Analysis of foodstuffs – Determination of raw protein content in bread including small baked products made of bread dough – Kjeldahl method
ASU L 48.01-25 1997-01	Analysis of foodstuffs – Determination of fibre in milk-based foods for infants and young children
CLF SOP 521-01 2020-02	Determination of the total fat content of selected foodstuffs – Weibull-Stoldt method
CLF SOP 521-03 2020-02	Determination of water content (dry content) in selected foodstuffs
CLF SOP 521-07 2020-02	Determination of total fibre and of soluble and insoluble fibre in selected foodstuffs using the Fibre Analyzer
CLF SOP 528-06 2020-02	Determination of the fill quantity of prepackages by gravimetry

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 9 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

1.1.7 Determination of ingredients and additives by titrimetry in foodstuffs **

DIN EN ISO 8968-1 2014-06	Milk and milk products – Determination of nitrogen content – Part 1: Kjeldahl principle and crude protein calculation
DIN EN ISO 8968-4 2012-12	Milk – Determination of nitrogen content – Part 4: Determination of non-protein nitrogen content
ASU L 49.00-7 2000-07	Analysis of foodstuffs – Determination of fluoride in dietary foods with the ion-sensitive electrode (Modification: <i>Matrix also selected foodstuffs, readily soluble samples without ultrasonic treatment, triple standard addition</i>)
CLF SOP 521-02 2020-02	Protein determination in selected foods according to Kjeldahl
CLF SOP 524-02 2020-02	Potentiometric determination of L-ascorbic acid with 2,6-dichlorophenolindophenol in foodstuffs
CLF SOP 526-01 2022-07	Determination of chloride in selected foodstuffs and feedstuffs using the potentiometric titration method (Restriction: <i>Here for foodstuffs</i>)

1.1.8 Determination of Ingredients, additives and contaminants by photometry in foodstuffs *

R-Biopharm AG lactose / D-galactose 10176303035 2017-08	UV test for determination of lactose and D-galactose in foodstuffs and other sample materials (Restriction: <i>Matrix only milk, milk products and dietary foods</i>)
ASU L 00.00-49/3 2001-07	Analysis of foodstuffs – Non-fatty foods – Determination of dithiocarbamate and thiuram disulfide residues – Part 3: UV spectrophotometric xanthate method
ASU L 00.00-94 2006-09	Analysis of foodstuffs – Determination of inulin in foods – Enzymatic method (Modification: <i>No neutralisation</i>)
AOAC 999.14 2003	Choline in infant milk formula and milk (Modification: <i>Matrix also selected foodstuffs, extension of the calibration range</i>)

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 10 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

1.1.9 Determination of nitrate and nitrite content in foodstuffs by UV/VIS spectroscopy **

DIN EN ISO 14673-2 2004-05	Milk and milk products – Determination of nitrate and nitrite content – Part 2: Method using segmented flow analysis (routine method) (Modification: <i>Same extraction agent for nitrate and nitrite</i>)
CLF SOP 534-01 2023-01	Determination of nitrate and nitrite content in fruit, vegetables and fruit and vegetable-based jarred products using cadmium reduction and spectrometry
CLF SOP 534-03 2020-01	Determination of nitrate and nitrite content in native and modified starches using cadmium reduction and spectrometry

1.1.10 Determination of parameters using thermal methods in foodstuffs

CLF SOP 521-13 2020-02	Determination of calorific value with the calorimeter and calculation of the calorific value in foodstuffs
CLF SOP 528-09 2022-03	Determination of osmolality and osmolarity using freezing point depression in foodstuffs

**1.1.11 Selected physical, physico-chemical and chemical analysis of
foodstuffs *****

Rotronic User Guide HygroLab C1 2014-11	Determination of water activity in foodstuffs by hygrometer
CLF SOP 528-02 2020-02	Determination of density in liquid foods by oscillating U-tube
CLF SOP 528-07 2020-02	Determination of the fill quantity of prepackages (volumetric)
CLF SOP 529-11 2020-02	Determination of the number of prepackages

Annex to the Accreditation Certificate D-PL-14076-01-00

1.2 Microbiological analysis

1.2.1 Determination and detection of bacteria, moulds and yeasts by cultural microbiological analysis in foodstuffs **

ISO 4831 2006-08	Microbiology – Horizontal method for the detection and enumeration of coliforms – MPN technique
ISO 4832 2006-02	Microbiology – Horizontal method for the detection and enumeration of coliforms – Colony count technique
ISO 6611 2004-10	Milk and milk products – Enumeration of colony-forming units of yeasts and/or moulds – Colony-count technique at 25 degrees C
ISO 11290-1 2017-05	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 (Modification: <i>Additionally identification with MALDI-TOF</i>)
ISO 11290-2 2017-05	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
ISO 13720 2010-08	Meat and meat products – Enumeration of presumptive <i>Pseudomonas</i> spp. (Modification: <i>Matrix also ready meals, plant-based foodstuffs, bakery products</i>)
ISO 15213 2003-05	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of sulphite-reducing bacteria growing under anaerobic conditions
ISO 21528-1 2017-06	Microbiology of the food chain – Horizontal method for the detection and enumeration of Enterobacteriaceae – Part 1: Detection of Enterobacteriaceae
ISO 21528-2 2017-06	Microbiology of food and animal feeding stuffs – Horizontal methods for the detection and enumeration of Enterobacteriaceae – Part 2: Colony-count method
ISO 22964 2017-04	Microbiology of the food chain – Horizontal method for the detection of <i>Cronobacter</i> spp. (Modification: <i>Additionally identification with MALDI-TOF</i>)
ISO 29981 2010-02	Milk products – Enumeration of presumptive bifidobacteria – Colony count technique at 37 degrees C

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 12 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

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 the pour plate technique
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 the surface plating technique
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. (Modification: <i>Additionally identification with MALDI-TOF</i>)
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 (Restriction: <i>Without section 9.2 (MPN method)</i>)
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
CLF SOP 511-09e 2020-02	Enumeration of Escherichia coli in foodstuffs
CLF SOP 511-10e 2020-02	Detection of Clostridium perfringens in foodstuffs
CLF SOP 511-11e 2020-02	Enumeration of sulphite-reducing clostridia (SRC) in foodstuffs
CLF SOP 511-12e 2020-02	Detection of enterococci in foodstuffs
CLF SOP 511-13e 2020-02	Enumeration of enterococci in foodstuffs
CLF SOP 511-19e 2020-02	Enumeration of mesophilic thermoresistant spore formers (MTS, 10 min, 80 °C)

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 13 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

CLF SOP 511-32e 2020-02	Enumeration of thermophilic thermoresistant spore formers (TTS, 10 min, 80 °C)
CLF SOP 511-49e 2020-02	Enumeration of Escherichia coli in foodstuffs
CLF SOP 511-50e 2020-02	Enumeration of enterobacteriaceae in foodstuffs
CLF SOP 511-51e 2020-02	Enumeration of Listeria monocytogenes in foodstuffs
CLF SOP 511-59e 2020-02	Enumeration of Bacillus cereus in foodstuffs
CLF SOP 511-60e 2020-02	Enumeration of coliform germs in foodstuffs
CLF SOP 511-61 2021-10	Enumeration of yeasts and moulds in foodstuffs and pet food (Modification: <i>Here for foodstuffs, incubation 96 h</i>)
CLF SOP 511-62e 2020-04	Enumeration of Clostridium perfringens in foodstuffs
CLF SOP 511-63e 2020-02	Enumeration of lactobacilli in foodstuffs
CLF SOP 511-64e 2020-02	Enumeration of sulphite-reducing clostridia under anaerobic conditions in foodstuffs

1.2.2 Detection of bacteria by MALDI-TOF in foodstuffs

CLF SOP 512-20e 2020-09	Detection of isolates by MALDI-TOF (Bruker database BDAL 9 - 8468MSPs as at 8.11.2019) (Restriction: <i>Here only detection of bacteria in foodstuffs</i>)
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Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 14 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

1.3 Immunological analysis

1.3.1 Determination of bacteria and allergens by enzyme immunoassay (ELISA) in foodstuffs *

ELISA SYSTEMS Beta-Lactoglobulin Residue (BLG) Test ESMRDBLG-48 2020-11	Determination of beta-lactoglobulin residues in foodstuffs by ELISA
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ELISA SYSTEMS Soy protein residue Test ESSOYPRD-48 2020-11	Determination of soya protein residues in foodstuffs by ELISA
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R-Biopharm AG RIDASCREEN® Fast Casein R4612 2021-06	Sandwich enzyme immunoassay for the quantitative determination of casein in foodstuffs such as ice cream, wine, chocolate, beverages, baby food, bakery products, sausages and baking mixes
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R-Biopharm AG RIDASCREEN® Gliadin R7001 2015-10	Sandwich enzyme immunoassay (ELISA) for quantitative determination of contamination by prolamins from wheat (gliadin), rye (secalin) and barley (hordein) in raw materials such as flour (buckwheat, rice, maize, oats, teff) and in processed foods such as pasta, ready meals, bakery products, sausages, beverages and ice cream
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1.4 Molecular biological analysis

1.4.1 Detection of bacteria by PCR (real-time) in foodstuffs ***

GeneScan BACGene Salmonella spp. No. 5123221801 2021-11	Detection of Salmonella using BACGene Salmonella spp. in foodstuffs, pet food and environmental samples
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1.4.2 Detection of bacteria by multiplex PCR (real-time) in foodstuffs *

BIOTECON Diagnostics foodproof® STEC Screening LyoKit R 602 11-1/-2 2017-03	Detection of pathogenic EHEC pathogens (enterohaemorrhagic Escherichia coli)
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Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 15 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

GeneScan	Detection of listeria using BACGene Listeria Multiplex in foodstuffs and
BACGene Listeria Multiplex	environmental samples
No. 5123221901	(Restriction: <i>Here only foodstuffs</i>)
2022-02	

1.5 Sensory analysis

1.5.1 Basic descriptive tests of foodstuffs ***

ASU L 00.90-6	Analysis of foodstuffs – Sensory test methods – Basic descriptive test
2015-06	(Modification: <i>Also without coding</i>)

2 Feedstuffs

2.1 Physical, physico-chemical and chemical analysis

2.1.1 Liquid chromatography (LC)

2.1.1.1 Determination of ingredients by liquid chromatography (LC) with conventional detectors (HPAEC-PAD, RI, UVD, FLD, DAD) in feedstuffs **

ASU L 49.07-2	Analysis of foodstuffs; Determination of the amino acid content in
1986-11	dietary foods on the basis of protein hydrolyzates
	(Modification: <i>Matrix also pet food; reagent amounts and hydrolysis conditions optimised, neutralisation instead of rotation after hydrolysis</i>)

ASU L 49.07-3	Analysis of foodstuffs; Determination of the tryptophan content in
1989-05	dietary foods on the basis of protein hydrolyzates
	(Modification: <i>Matrix also pet food; sample tube not evacuated before hydrolysis, sample dissolved in acid buffer after hydrolysis & neutralisation</i>)

CLF SOP 523-01	Determination of the content of vitamin A (retinol) and vitamin E (α -
2023-01	tocopherol) in selected feedstuffs by HPLC-UV

CLF SOP 523-07	Determination of retinol acetate, retinol palmitate and d,l-alpha-
2022-07	tocopheryl acetate in premixes by HPLC-UV in foodstuffs

CLF SOP 524-01	Determination of vitamins B1, B2 and B6 in selected feedstuffs by
202-07	automated online solid phase extraction and HPLC-UV

CLF SOP 524-03	Determination of niacin in selected feedstuffs by HPLC-UV
2021-04	

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 16 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

CLF SOP 524-05 2022-07	Determination of vitamin B12 in selected feedstuffs by HPLC-UV after clean-up on an immunoaffinity column
CLF SOP 524-14 2022-07	Quantitative determination of vitamin B1, B2, B3 and B6 in premixes for human and animal food by HPLC-UV (Restriction: <i>Here for feedstuffs</i>)
CLF SOP 525-01 2020-02	Determination of the total cystine content in pet food by amino acid analyser
CLF SOP 525-02 2020-02	Determination of the content of taurine in pet food by amino acid analyser

2.1.1.2 Determination of ingredients and additives by liquid chromatography (LC) with mass selective detectors (MS/MS detector) in feedstuffs *

CLF SOP 523-10 2022-07	Determination of vitamin D2/D3 in selected feedstuffs by LC-MS/MS
CLF SOP 524-11 2022-11	Quantitative determination of pantothenic acid (vitamin B5) in selected feedstuffs by LC-MS/MS
CLF SOP 524-12 2020-02	Quantitative determination of folic acid and 5-methyltetrahydrofolate in selected feedstuffs by LC-MS/MS

2.1.2 Determination of fatty acids by gas chromatography (GC) with conventional detectors (FID detector) in feedstuffs

CLF SOP 527-02 2020-02	Qualitative and quantitative determination of fatty acids in feedstuffs by capillary gas chromatography (GC-FID)
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2.1.3 Determination of ingredients in feedstuffs by titrimetry ***

ASU F 0003 (EG) 2010-09	Analysis of feedstuffs – Determination of crude protein in feedstuffs – Kjeldahl method – Annex III to Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the sampling methods and the methods of analysis for the official control of feed materials (OJ EC L 54/1 of 26.02.2009)
CLF SOP 526-01 2022-07	Determination of chloride in selected feedstuffs using the potentiometric titration method

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 17 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

2.1.4 Determination of ingredients by gravimetry in feedstuffs

ASU F 0001 (EG) 2010-09	Analysis of feedstuffs – Determination of moisture in feedstuffs – Annex III to Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the sampling methods and the methods of analysis for the official control of feed materials (OJ EC L 54/1 of 26.02.2009)
ASU F 0009 (EG) 2010-09	Analysis of feedstuffs – Determination of crude oils and fats in feedstuffs – Annex III to Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the sampling methods and the methods of analysis for the official control of feed materials (OJ EC L 54/1 of 26.02.2009)
ASU F 0010 (EG) 2010-09	Analysis of feedstuffs – Determination of crude fibre in feedstuffs – Annex III to Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the sampling methods and the methods of analysis for the official control of feed materials (OJ EC L 54/1 of 26.02.2009)
ASU F 0014 (EG) 2010-09	Analysis of feedstuffs – Determination of crude ash in feedstuffs – Annex III to Commission Regulation (EC) No 152/2009 of 27 January 2009 laying down the sampling methods and the methods of analysis for the official control of feed materials (OJ EC L 54/1 of 26.02.2009)

2.1.5 Determination of calorific value by calorimeter in feedstuffs

CLF SOP 521-13 2020-02	Determination of calorific value with the calorimeter and calculation of the calorific value in feedstuffs
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2.1.6 Determination of ingredients in pet food by photometry

CLF SOP 524-04 2020-02	Determination of choline in pet food by photometry
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2.1.7 Determination of elements by atomic emission spectrometry with inductively coupled plasma (ICP-OES) in feedstuffs ***

DIN EN 16943 2017-07	Foodstuffs – Determination of elements and their chemical species – Determination of minerals by ICP-OES (Modification: <i>Application to feedstuffs matrix, no analysis of sulphur. no ionisation buffer</i>)
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Annex to the Accreditation Certificate D-PL-14076-01-00

2.1.8 Determination of elements by inductively coupled plasma mass spectrometry (ICP-MS) in feedstuffs ***

DIN EN 15111 2007-06	Foodstuffs – Determination of trace elements – Determination of iodine by ICP-MS (mass spectrometry with inductively coupled plasma) (Modification: <i>Application to feedstuffs matrix, modified internal standard</i>)
CLF SOP 526-11 2023-01	Determination of trace elements and toxic metals in selected foodstuffs and feedstuffs after pressure digestion by ICP-MS (Restriction: <i>Here for feedstuffs</i>)

2.1.9 Determination of parameters in feedstuffs by hygrometer ***

Rotronic User Guide HygroLab C1 2014-11	Determination of water activity in feedstuffs by hygrometer
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2.2 Microbiological analysis

2.2.1 Determination and detection of bacteria by cultural microbiological analysis in pet food **

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 the pour plate technique
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 the surface plating technique
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. (Modification: <i>Additionally identification with MALDI-TOF</i>)
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
CLF SOP 511-61 2021-10	Yeasts and moulds – Enumeration in foodstuffs and pet food (Modification: <i>Here for pet food, incubation 96 h</i>)

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 19 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

2.3 Molecular biological analysis ***

GeneScan	Detection of Salmonella using BACGene Salmonella spp. in foodstuffs,
BACGene Salmonella spp.	pet food and environmental samples
No. 5123221801	
2021-11	

3 Fitment and utensils in food areas

3.1 Microbiological analysis

3.1.1 Detection and determination of bacteria by cultural microbiological analysis in environmental samples, fitment and utensils in food areas *

ISO 11290-1 2017-05	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 (Modification: <i>Additionally identification with MALDI-TOF</i>)
ISO 11290-2 2017-05	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
ISO 21528-1 2017-06	Microbiology of the food chain – Horizontal method for the detection and enumeration of Enterobacteriaceae – Part 1: Detection of Enterobacteriaceae
ISO 22964 2017-04	Microbiology of the food chain – Horizontal method for the detection of <i>Cronobacter</i> spp. (Modification: <i>Additionally identification with MALDI-TOF</i>)
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 the surface plating technique
DIN EN ISO 6579-01 2020-08	Microbiology of the food chain – Horizontal method for the detection, enumeration and serotyping of salmonella – Part 1: Detection of <i>Salmonella</i> spp. (Modification: <i>Additionally identification with MALDI-TOF</i>)
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

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 20 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Annex to the Accreditation Certificate D-PL-14076-01-00

ASU B 80.00-1 1998-01	Investigation of commodities – Determination of surface colony count on fitment and utensils in food areas – Part 1: Quantitative swab method (adoption of the eponymous German standard DIN 10113-1, July 1997 edition) (Modification: <i>Prolonged extraction, method extended to sponges, semi-quantitative procedure limited to detection</i>)
ASU B 80.00-2 1998-01	Investigation of commodities – Determination of surface colony count on fitment and utensils in food areas – Part 2: Semi-quantitative swab method (adoption of the eponymous German standard DIN 10113-2, July 1997 edition) (Modification: <i>Prolonged extraction, method extended to sponges</i>)
ASU B 80.00-3 1998-01	Investigation of commodities – Determination of surface colony count on fitment and utensils in food areas – Part 3: Semi-quantitative method with culture media laminated taking-up equipment (squeeze method) (adoption of the eponymous German standard DIN 10113-3, July 1997 edition)

3.2 Molecular biological analysis ***

GeneScan BACGene Listeria Multiplex No. 5123221901 2022-02	Detection of listeria using BACGene Listeria Multiplex in foodstuffs and environmental samples (Restriction: <i>Here for fitment and utensils in food areas</i>)
GeneScan BACGene Salmonella spp. No. 5123221801 2021-11	Detection of Salmonella using BACGene Salmonella spp. in foodstuffs, pet food and environmental samples (Restriction: <i>Here for fitment and utensils in food areas</i>)

Abbreviations used:

AOAC	AOAC International
ASU	Amtliche Sammlung von Untersuchungsverfahren (Official Collection of Test Methods)
DIN	Deutsches Institut für Normung (German Institute for Standardization)
EN	European Standard
FSMP	Food for special medical purposes
IEC	International Electrotechnical Commission
ISO	International Organisation for Standardisation
TS	Technical specification
CLF SOP xxx-xx	In-house method of Eurofins CLF Specialised Nutrition Testing Services GmbH

Valid from: 03.11.2023

Date of issue: 03.11.2023

Page 21 of 21

This document is a translation. The definitive version is the original German annex to the accreditation certificate.