Deutsche Akkreditierungsstelle GmbH

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

Valid from: **22.09.2022**

Date of issue: 22.09.2022

Holder of certificate:

SGS INSTITUT FRESENIUS GmbH
Im Maisel 14, 65232 Taunusstein

Tests in the fields:

Physical, physico-chemical, chemical, microbiological, ecotoxicological, biological, biochemical and organoleptic analysis of foodstuffs, cosmetics, commodities, disinfectants, water, bathing water, process water, waste water, waste, materials for recycling, soils, dust, ashes and slags;
Analysis of electrotechnical products;
Analysis of organic chemical products;
Chemical analysis of metals, steels and alloys;
Chemical, physical, microbiological and mechanical-technological analysis of textiles and leather;
Cleaning performance of ship sewage treatment plants or on-board sewage treatment plants;
Determination of aerosols, inorganic and organic gases and vapours;
Determination of airborne pollutants and of germs and mould in indoor air;
Analysis in accordance with the German Drinking Water Ordinance with the exception of radioactive substances;
Sampling and microbiological analysis of industrial water in accordance with Section 3 (8) 42nd BImSchV;

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

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

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

Sampling of raw and drinking water, water from mineral springs and spas, aquifers, barrages and lakes, from swimming pool and bathing pool water, waste water, from running waters, landfill leachate, water from recooling systems and ventilation and air-conditioning systems, technically treated water, foodstuffs, plant materials, soil intended for agriculture, sediments, sewage sludge, biowaste, waste and dust, materials for recycling;
Specialist modules for water and waste

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

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

Within sections 1 to 12, the testing laboratory is permitted, without being required to inform and obtain prior approval from DAkkS, to use standards or equivalent testing methods listed here with different issue dates.

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

For sections 1.1 to 1.8.3, the following also applies:
The body fulfils the requirements for technical services set out in Section 1 (2) no. 1 BinSchUO in conjunction with Article 18.10 ES-TRIN.

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1 Analysis of groundwater, surface water, raw water and drinking water, swimming pool and bathing pool water, waste water, spa water, mineral water, spring water and bottled water, natural mineral waters, water from ventilation and air-conditioning systems, water from recooler systems and eluates

1.1 Sampling

ISO 5667-11 2009-04	Water quality – Sampling – Part 11: Guidance on sampling of groundwaters
DIN EN ISO 5667-1 (A 4) 2007-04	Water quality – Sampling – Part 1: Guidance on the design of sampling programmes and sampling techniques
DIN 38402-A 11	Sampling of waste water

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2009-02	
DIN 38402-A 12 1985-06	Sampling from barrages and lakes
DIN 38402-A 13 2021-12	Sampling from aquifers
DIN 38402-A 18 1991-05	Sampling of water from mineral springs and spas
DIN ISO 5667-5 (A 14) 2011-02	Water quality – Sampling – Part 5: Guidance on sampling of drinking water from treatment works and piped distribution systems
DIN 38402-A 15 2010-04	Sampling from running waters
DIN EN ISO 5667-6 2016-12	Sampling from running waters
DIN EN ISO 5667-3 (A 21) 2019-01	Water quality – Sampling – Part 3: Preservation and handling of water samples
DIN 38402-A 22 1991-06	Sampling of water and steam in boiler plants
DIN 38402-A 30 1998-07	Pretreatment, homogenisation and aliquotation of non-homogeneous water samples
DIN EN ISO 19458 (K 19 Sections 4.4.3 and 4.4.4.1 2006-12	Water quality – Sampling for microbiological analysis (*Here for sampling of swimming pool and bathing pool water*)
DIN 19643-1 section 14.2 2012-11	Treatment of swimming pool and bathing pool water – Part 1: General requirements (Here: *For sampling*)
UBA Recommendation of 4.12.2013	Recommendation of the German Federal Environment Agency on sampling of drinking water and bathing pool water and sample transport
DIN 4030-2 1991-06	Assessment of water, soil and gases for their aggressiveness to concrete; collection and examination of water and soil samples

VDI 2047 Blatt 2 2015-01	Open recooler systems – Securing hygienically sound operation of evaporative cooling systems (VDI Cooling Tower Code of Practice) (Here: *Implementation of sampling only*)
VDI 6022 Blatt 1 2018-01	Hygiene requirements for ventilation and air-conditioning systems and units; sections 8.1 to 8.3 (sampling of water in HVAC systems and equipment, indoor air and surfaces)
DVGW W 111 1997-03	Planning, implementation and evaluation of pumping tests for water development
DVWK 128 1992-01	Scope of sampling and examination of groundwater samples
DVWK 245 1997-01	Depth-oriented sampling from groundwater monitoring wells
LAGA Guideline PN 1/75 1984-01	Sampling of water

1.2 Physical and physico-chemical parameters *

DEV B ½ 1971	Test for odour and flavour
DIN EN 1622 (B 3) 2006-10	Determination of the threshold odour number (TON) and threshold flavour number (TFN)
DIN EN ISO 7887 (C 1) 2012-04	Water quality – Examination and determination of colour
DIN EN ISO 7027-1 2016-11	Water quality – Determination of turbidity – Part 1: Quantitative method
DIN 38404-C 3 2005-07	Determination of absorption in the range of ultraviolet 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
DIN 38404-C 6 1984-05	Determination of the oxidation reduction (redox) potential
DIN EN 27888 (C 8) 1993-11	Water quality – Determination of electrical conductivity
In-house method SOP M 1662 2014-10	Determination of free and bound chlorine, chlorine dioxide, free bromine and ozone with compact photometer Allcon Test S
DIN EN ISO 12185 1997-11	Crude petroleum and petroleum products – Determination of density – Oscillating U-tube method
DIN EN ISO 6271 2016-05	Clear liquids – Estimation of colour by the platinum-cobalt colour scale

1.3 Inorganic parameters

1.3.1 By ion chromatography ** [UV/VIS, conductivity]

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
DIN EN ISO 10304-3 (D 22) 1997-11	Water quality – Determination of dissolved anions by liquid chromatography of ions – Part 3: Determination of chromate, iodide, sulphite, thiocyanate and thiosulphate
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
DIN EN ISO 11206 (D 48) 2013-05	Water quality – Determination of dissolved bromate – Method using ion chromatography (IC) and post column reaction (PCR)
EPA 326.0 2002-06	Determination of inorganic oxyhalide disinfection by-products in drinking water using ion chromatography
In-house method SOP M 1738 2017-09	Determination of dissolved bromate by ion chromatography with post-column derivatisation
In-house method SOP M 1172 2018-04	Determination of chromium(VI) by ion chromatography and post-column derivatisation
In-house method SOP M 3700 2019-09	Determination of organic acids in air samples, water, aqueous extracts, cleaning agents and migrates BY ion chromatography and HPLC
In-house method SOP M 3705 2019-10	Determination of bromide in trace amounts by ion chromatography and enrichment column in aqueous solutions

1.3.2 By photometry **

DIN EN ISO 6878 (D 11) 2004-09	Water quality – Determination of phosphorus – Ammonium molybdate photometric method
DIN 38405-D 21 1990-10	Determination of dissolved silicate by spectrometry

DIN 38405-D 26 1989-04	Photometric determination of dissolved sulphide
DIN 38405-D 33 2001-02	Determination of iodide by photometry
DIN EN ISO 18412 (D 40) 2007-02	Water quality – Determination of chromium(VI) – Photometric method for weakly contaminated water
DIN EN ISO 6878 (D 11) 2004-09	Water quality – Determination of phosphorus – Ammonium molybdate photometric method (Modification: *Automated implementation with the Ganimede P (Hach-Lange method)*)
ASU L 59.11-22 1986-11	Determination of the nitrite ion in natural mineral water
ASU L 59.11-13 1985-12	Determination of ammonium nitrogen in natural mineral water
ASU L 59.11-25 1986-11	Determination of phosphorus compounds in natural mineral water
DIN EN ISO 11732 (E 23) 2005-05	Water quality – Determination of ammonium nitrogen – Method by flow analysis (CFA and FIA) and spectrometric detection
In-house method SOP M 3704 2019-05	Photometric determination of manganese II in water, waste water and eluates in accordance with DIN 38406-2:1983-05
In-house method SOP M 3703 2019-09	Photometric determination of iron II in water, waste water and eluates with 2,2'-bipyridine
DIN 38405-D 27 2017-10	Determination of sulphide by gas extraction
DIN EN ISO 14403-2 (D 3) 2012-10	Water quality – Determination of total cyanide and free cyanide using flow analysis (FIA and CFA) – Part 2: Method using continuous flow analysis (CFA)

1.3.3 By electrochemistry **

DIN 38405-D 1 1985-12	Determination of chloride ions
DIN 38405-D 4 1985-07	Determination of fluoride
ASU L 59.11-18 1986-11	Determination of fluoride in natural mineral water
In-house method SOP M 2905 2012-11	Determination of hypochlorite in waste water by iodometric titration

1.3.4 By AAS** [CV-AAS, HG-AAS, GF-AAS]

DIN 38405-D 23 1994-10	Determination of selenium by atomic absorption spectrometry
DIN 38405-D 32 2000-05	Determination of antimony by atomic absorption spectrometry
ASU L 59.11-2 1998-09	Determination of arsenic in natural mineral water by hydride generation atomic absorption spectrometry (AAS)
ASU L 59.11-3 2000-07	Determination of lead, cadmium, chromium, manganese and nickel in natural mineral water by graphite furnace atomic absorption spectrometry (AAS)
ASU L 59.11-5 1998-09	Determination of mercury in natural mineral water by hydride generation atomic absorption spectrometry (AAS)
ASU L 59.11-6 1985-12	Determination of silver, cobalt, copper, nickel and zinc in natural mineral water
ASU L 59.11-8 1998-09	Determination of selenium in natural mineral water by hydride generation atomic absorption spectrometry (AAS)

ASU L 59.11-14 1986-11	Determination of calcium and magnesium in natural mineral water
ASU L 59.11-17 1986-11	Determination of iron in natural mineral water
DIN EN ISO 12846 (E 12) 2012-08	Water quality – Determination of mercury – Method using atomic absorption spectrometry (AAS) with and without enrichment
ISO 17378-2 2014-02	Water quality –Determination of arsenic and antimony – Part 2: Method using hydride generation atomic absorption spectrometry (HG-AAS)
In-house method SOP M 3762 2019-10	Separate determination of arsenic III and arsenic V BY atomic absorption spectrometry (AAS)-hydride technique

1.3.5 By ICP-OES

DIN EN ISO 11885 (E 22) 2009-09	Water quality – Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES)

1.3.6 By ICP-MS **

DIN EN ISO 17294-2 (E 29) 2017-01	Water quality – Application of inductively coupled plasma mass spectrometry (ICP-MS) – Part 2: Determination of 62 elements
In-house method SOP M 3763 2019-10	Determination of gadolinium (X-ray contrast medium) in trace amounts by inductively coupled plasma mass spectrometry (ICP-MS)

1.4 Organic parameters

1.4.1 Bygas chromatography with conventional detectors (TEA, FID)

In-house method SOP M 1671 2008-11	Determination of N-nitrosamines (e.g: N-nitrosodimethylamine, N-nitrosodiethylamine) in water by GC/TEA
In-house method SOP M 1779 2018-04	Determination of methane, ethane and ethene in water samples by HS-GC/FID
In-house method SOP M 3453 2018-10	Quantitative determination of solvents and alcohols in water by HS-GC-FID

1.4.2 By gas chromatography with mass selective detectors [MS, MS/MS] **

In-house method SOP M 123 2009-02	Identification of organic substances in water by GC-MS screening
In-house method SOP M 886 2011-07	Determination of pesticides (e.g. alachlor, amitraz, fonofos, captafol, phosmet, triallate) in water by GC-MS with large volume injection
In-house method SOP M 1228 2019-04	Determination of disinfectant residues (e.g: dichloroacetonitrile, dibromoacetonitrile) in water by liquid-liquid extraction and GC/MS
In-house method SOP M 1713 2017-10	Gas chromatographic determination of polar organic substances in water and aqueous solutions
DIN EN ISO 10695 (F 6) 2000-11	Water quality – Determination of selected organic nitrogen and phosphorus compounds – Gas chromatographic method
In-house method SOP M 3157 2019-10	Determination of bisphenol-A in water by SBSE/GC/MS
In-house method SOP M 3158 2019-10	Determination of plasticisers and phenols in water by SBSE/GC/MS
In-house method SOP M 3377 2016-05	Quantitative determination of long-chain aldehydes in water by HS-SPME-GC-MS analysis
In-house method SOP M 3378 2016-05	Quantitative determination of sensory active substances in water by HS-SPME-GC-MS analysis
In-house method SOP M 3418 2017-02	Quantitative determination of VOCs in water by HS-SPME-GC-MS analysis
DIN EN ISO 10301 (F 4) 2004-08	Water quality – Determination of highly volatile halogenated hydrocarbons – Gas-chromatographic methods
DIN EN ISO 17353 (F 13) 2005-11	Water quality – Determination of selected organotin compounds – Gas chromatographic method
DIN 38407 (F 16) 1999-06	Determination of aniline derivatives by gas chromatography (Modification: *Extraction with dichloromethane*)

DIN EN ISO 15680 (F 19) 2004-04	Water quality – Gas chromatographic determination of a number of monocyclic aromatic hydrocarbons, naphthalene and several chlorinated compounds using purge and trap and thermal desorption
DIN EN ISO 23631 (F 25) 2006-05	Water quality – Determination of dalapon, trichloroacetic acid and selected haloacetic acids – Method using gas chromatography (GC-ECD and/or GC-MS detection) after liquid-liquid extraction and derivatisation
DIN EN 14207 (P 9) 2003-09	Water quality – Determination of epichlorohydrin
DIN EN ISO 16588 (P 10) 2004-02	Water quality – Determination of six complexing agents – Gas chromatographic method
DIN EN ISO 17943 2016-10	Water quality – Determination of volatile organic compounds in water – Method using headspace solid-phase micro-extraction (HS-SPME) followed by gas chromatography-mass spectrometry (GC-MS)

1.4.3 By Liquid chromatography with conventional detectors

In-house method SOP M 167 2016-05	Determination of aldehydes (DNPH method)

1.4.4 By liquid chromatography with mass selective detectors [MS, MS/MS] **

ISO 25101 2009-03	Water quality – Determination of perfluorooctanesulfonate (PFOS) and perfluorooctanoate (PFOA) – Method for unfiltered samples using solid phase extraction and liquid chromatography/mass spectrometry
DIN 38407-F 42 2011-03	Determination of selected polyfluorinated compounds (PFC) in water – Method using high performance liquid chromatography and mass spectrometric detection (HPLC/MS-MS) after solid-liquid extraction
DIN 38407-F 35 2010-10	Determination of selected phenoxyalkyl carbonic acids and further acid plant treatment agents – Method using high performance liquid chromatography and mass spectrometric detection (HPLC-MS/MS)

DIN 38407-F 36 2014-09	Determination of selected active substances of plant protection products and other organic substances in water – Method using high performance liquid chromatography and mass spectrometric detection (HPLC-MS/MS or -HRMS) after direct injection
DIN 38407-F 47 2017-07	Determination of selected active pharmaceutical ingredients and other organic substances in water and waste water – Method using high performance liquid chromatography and mass spectrometric detection (HPLC-MS/MS or HRMS) after direct injection
DIN 38413-P 6 2007-02	Determination of acrylamide – Method using high performance liquid chromatography with mass spectrometric detection (HPLC-MS/MS)
DIN ISO 16308 2014-09	Water quality – Determination of glyphosate and AMPA – Method using high performance liquid chromatography (HPLC) with tandem mass spectrometric detection
In-house method SOP M 789 2011-07	Determination of amitrol in water
In-house method SOP M 1229 2011-07	Determination of cationic pesticides (e.g: paraquat) by LC-MS/MS
In-house method SOP M 1230 2009-06	Determination of pesticides (e.g: bentazon, desethylatrazine, metolachlor, dimethylsulfamide) by LC/MS-MS (direct measurement)
In-house method SOP M 1231 2014-06	Determination of pesticides (e.g: carbendazim, oxamyl, monocrotophos, methomyl) by solid phase extraction and LC/MS-MS
In-house method SOP M 2485 2011-07	Determination of polar organic residues (e.g. medicinal products, X-ray contrast media, sweeteners, preservatives, microcystins, anti-corrosion agents, etc.) in water by LC-MS/MS
In-house method SOP M 2547 2011-07	Determination of amines (e.g. dimethylamine, aniline, ethylenediamine) in aqueous solution by LC-MS/MS
In-house method SOP M 2548 2011-07	Determination of sweeteners (e.g. acesulfame, saccharin, cyclamate) in water by LC-MS/MS

In-house method SOP M 3450 2018-04	Determination of anthranilic acid amide in aqueous solution by LC-MS/MS
In-house method SOP M 3560 2018-04	Determination of trifluoroacetic acid in water by LC-MS/MS
In-house method SOP M 3561 2018-05	Determination of steroids in water by LC-MS/MS

1.5 Gaseous components

DIN EN ISO 7393-2 (G 4) 2019-03	Water quality – Determination of free chlorine and total chlorine – Part 2: Colorimetric method using N,N-diethyl-1,4-phenylenediamine, for routine control purposes
DIN EN 25813 (G 21) 1993-01	Water quality – Determination of dissolved oxygen – Iodometric method
DIN EN 25814 (G 22) 1992-11	Water quality – Determination of dissolved oxygen – Electrochemical probe method
DIN ISO 17289 2014-12	Water quality – Determination of dissolved oxygen – Optical sensor method
In-house method SOP M3664 2019-10	Determination of carbon dioxide in natural mineral water

1.6 Summary indices of actions and substances

DIN 38409-H 1 1987-01	Determination of total dry residue, filtrate dry residue and residue on ignition
DIN 38409-H 2 1987-03	Determination of filterable matter and the residue on ignition
DIN EN 1484 (H 3) 2019-04	Water analysis – Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC)
DIN 38409-H 7 2005-12	Determination of acid and base-neutralising capacities
DIN 38409-H 9 1980-07	Determination of the settleable matter by volume in water and waste water

DIN 38409-H 10 1980-07	Determination of the settleable matter by mass concentration in water and waste water
DIN EN ISO 9562-H 14 2005-02	Water quality – Determination of adsorbable organically bound halogens (AOX)
DIN 38409-H 15 1987-06	Determination of hydrogen peroxide and its adducts
DIN 38409-H 16 1984-06	Determination of the phenol index
DIN 38409-H 23 2010-12	Determination of methylene blue active and bismut active substances
DIN EN 903 (H 24) 1994-01	Water quality – Determination of anionic surfactants by measurement of the methylene blue index MBAS
DIN EN 872 (H 33) 2005-04	Water quality – Determination of suspended solids – Method by filtration through glass fibre filters
DIN 38409-H 41 1980-12	Determination of chemical oxygen demand (COD) in the range over 15 mg/l
In-house method SOP M 230 2009-01	Water quality – Determination of permanganate index
In-house method SOP M 152 1971-01	Determination of steam-volatile organic acids
In-house method SOP M 151 1998-10	Determination of cation-active detergents with bromophenol blue in accordance with DIN 38409-H23

1.7 Microbiological methods *

DIN EN ISO 6222 (K 5) 1999-07	Water quality – Enumeration of culturable microorganisms – Colony count by inoculation in a nutrient agar culture medium
TrinkwV Section 15 (1c)	Quantitative determination of culturable microorganisms – Colony count at 20 °C and 36 °C
DIN EN ISO 9308-1 (K 12) 2017-09	Water quality – Detection and enumeration of Escherichia coli and coliform bacteria – Part 1: Membrane filtration method

DIN EN ISO 9308-2 (K 6-1) 2014-06	Water quality – Enumeration of Escherichia coli and coliform bacteria – Part 2: Most probable number method
DIN EN ISO 9308-3 (K 13) 1999-07	Water quality – Detection and enumeration of Escherichia coli and coliform bacteria in surface water and waste water – Part 3: Miniaturised method by inoculation in liquid medium (MPN technique)
DIN EN ISO 16266 (K 11) 2008-05	Water quality – Detection and enumeration of Pseudomonas aeruginosa – Membrane filtration method
ISO 16266-2 2018-07	Water quality – Detection and enumeration of Pseudomonas aeruginosa – Part 2: Most probable number method
DIN EN ISO 7899-1 (K 14) 1999-07	Water quality – Detection and enumeration of intestinal enterococci – Part 1: Miniaturised method by inoculation in liquid medium (MPN technique)
DIN EN ISO 7899-2 (K 15) 2000-11	Water quality – Detection and enumeration of intestinal enterococci – Part 2: Membrane filtration method
DIN EN ISO 14189 (K 24) 2016-11	Water quality – Enumeration of Clostridium perfringens – Method using membrane filtration
DIN EN ISO 11731 2019-03	Water quality – Enumeration of legionella
DIN EN 14898 2007-09	Water conditioning equipment inside buildings – Active media filters – Requirements for performance, safety and testing (section 6.5 “Chlorine reduction”, section 6.6 “Chemical and odour/taste reduction”)
Min/TafelWV Annex 2 2006-12 SOP M 3852 2021-01	Microbiological analysis of mineral water and bottled water in accordance with the Mineral and Bottled Water Ordinance, Annex 2 (2006-12) - Determination of the colony count at 20 °C and 37 °C - Detection of Escherichia coli and coliform bacteria - Detection of Pseudomonas aeruginosa - Detection of faecal streptococci - Detection of sulphite-reducing, spore-forming anaerobes

In-house method SOP M 1124 2021-01	In-house method for the microbiological analysis of mineral water and bottled water for E. coli/coliform bacteria and P. aeruginosa in accordance with the Mineral and Bottled Water Ordinance, Annex 2 (2006-12) - Detection of Escherichia coli and coliform bacteria (Modification: Incubation time 36 hours, identification using MALDI/Vitek®) - Detection of Pseudomonas aeruginosa (Modification: Identification using MALDI/Vitek®)
In-house method SOP M 3851 2021-01	Microbiological analysis of industrial water
In-house method SOP M 2332 2020-02	Mikrobiologische Untersuchung von Water samples – Alternative colony count methods
In-house method SOP M 407 2020-02	Quantitative and qualitative methods for microbiological analysis of foodstuffs
In-house method SOP M 3738 2020-02	Microbiological analysis of swab samples - Mineral wells
DIN 18879-1 2007-12	Equipment for commercial kitchens – Systems for treatment of potable water for commercial kitchens – Part 1: Decarbonisation-systems installed before equipment for commercial kitchens (section 7.4 “Microbiological requirements and tests”)

1.7.1 Methods for the identification of microorganisms *

In-house method SOP M 204 2020-02	Orientation identification for determination of bacterial genus
In-house method SOP M 205 2017-07	Identification of microorganisms for determination of species
In-house method SOP M 1335 2020-10	Identification of microorganisms with the MicroSeq ID System with MicroSeq ID Analysis Software V2.0/ Sequencing Analysis Software V5.3/ Genetic Analyzer Data Collection Software V 5.2 (Kits: MicroSeq 500 16s-rDNA Sequencing Kit / MicroSeq D2 LSU rDNA Fungal Sequencing Kit)
In-house method SOP M 3435 2019-11	Identification of microorganisms with the MALDI Biotyper System with software MBT Compass HT V5.0.0

In-house method SOP G 478 2020-11	Standard operating procedure for the Vitek 2 Compact 60 device with Vitek Software V9.02 and Vitek 2 compact identification cards

1.8 Testing in the area of biodegradation, ecotoxicology and environmental fate

1.8.1 Biodegradation

DIN EN ISO 11734 (L 47) 1998-11	Water quality – Determination of the “ultimate” anaerobic biodegradability of organic compounds in digested sludge – Method by measurement of biogas production
DIN EN 1899-2 (H 52) 1998-05	Water quality – Determination of biochemical oxygen demand after n days
OECD Guideline 301 A 1992-07	Degradation and Accumulation; Ready Biodegradability; DOC Die-Away Test
OECD Guideline 301 B 1992-07	Degradation and Accumulation; Ready Biodegradability; Modified Sturm Test
OECD Guideline 301 D 1992-07	Degradation and Accumulation; Ready Biodegradability; Closed Bottle Test
OECD Guideline 301 E 1992-07	Degradation and Accumulation; Ready Biodegradability; Modified OECD Screening Test
OECD Guideline 301 F 1992-07	Degradation and Accumulation; Ready Biodegradability; Manimetric Respirometry Test
OECD Guideline 302 B 1992-07	Degradation and Accumulation; Inherent Biodegradability; Modified Zahn-Wellens-Test
OECD Guideline 302 C 2009-02	Degradation and Accumulation; Inherent Biodegradability; Modified MITI (II) Test

1.8.2 Ecotoxicology

DIN 38412-L 16 1985-12	Determination of chlorophyll a in surface water
DIN EN ISO 9408 (L 22) 1999-12	Water quality; evaluation in an aqueous medium of the “ultimate” aerobic biodegradability of organic compounds; method by determining the oxygen demand in a closed respirometer

DIN EN ISO 9888 (L 25) 1999-11	Water quality – Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium – Static test (Zahn-Wellens method)
DIN 38412-L 30 1989-03	Determination of the tolerance of Daphnia to the toxicity of waste water by way of a dilution series
DIN 38412-L 33 1991-03	Determination of the tolerance of green algae to the toxicity of waste water (*Scenedesmus* chlorophyll fluorescence test)
DIN EN ISO 11348-2 (L 34) 2009-05	Water quality – Determination of the inhibitory effect of water samples on the light emission of Vibrio fischeri (Luminescent bacteria test) – Part 2: Method using liquid-dried bacteria
DIN EN ISO 15088 (T 6) 2009-06	Water quality – Determination of the acute toxicity of waste water to zebrafish eggs (*Danio rerio*)
OECD Guideline 201 2006-03	Effects on Biotic Systems; Alga, Growth Inhibition Test
OECD Guideline 202 2004-04	Effects on Biotic Systems; Daphnia spec., Acute Immobilisation Test
OECD Guideline 208 2006-08	Effects on Biotic Systems; Terrestrial Plant Test: Seedling Emergence and Seedling Growth Test
OECD Guideline 209 2010-07	Effects on Biotic Systems; Activated Sludge, Respiration Inhibition Test

1.8.3 Selected molecular biological methods

In-house method SOP M 459 2000-05	Determination of the protein concentration in aqueous media according to the Lowry method

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

Sampling

Method	Title
DIN EN ISO 19458 (K 19) 2006-12	Water quality – Sampling for microbiological analysis
	Recommendation of the Federal Environmental Agency for the sampling and detection of Legionella in evaporative cooling plants, cooling towers and wet separators dated 06.03.2020, Sections C and D

Microbiological analyses

Parameter	Method
Legionella	DIN EN ISO 11731 (K 23) 2019-03
	Recommendation of the Federal Environmental Agency for the sampling and detection of Legionella in evaporative cooling plants, cooling towers and wet separators dated 06.03.2020, Sections E and F taking into account Annexes 1 and 2
Colony count at 22 °C and 36 °C	DIN EN ISO 6222 (K 5) 1999-07

2 Tests in accordance with the German Drinking Water Ordinance – TrinkwV

Sampling

Method	Title
DIN EN ISO 5667-1 (A 4) 2007-04	Water quality – Sampling – Part 1: Guidance on the design of sampling programmes and sampling techniques
DIN ISO 5667-5 (A 14) 2011-02	Water quality – Sampling – Part 5: Guidance on sampling of drinking water from treatment works and piped distribution systems
DIN EN ISO 5667-3 (A 21) 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
UBA Recommendation 18 December 2018	Assessment of drinking water quality with respect to the parameters lead, copper and nickel

ANNEX 1: MICROBIOLOGICAL PARAMETERS

PART I: General requirements for drinking water

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

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

No.	Parameter	Method
1	Escherichia coli (E. coli)	DIN EN ISO 9308-1 (K 12) 2017-09 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 ISO 16266-2 2018-07

ANNEX 2: CHEMICAL PARAMETERS

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

No.	Parameter	Method
1	Acrylamide	DIN 38413-P 6 2007-02
2	Benzene	Not used
3	Boron	DIN EN ISO 11885 (E 22) 2009-09 DIN EN ISO 17294-2 (E 29) 2017-01
4	Bromate	DIN EN ISO 11206 (D 48) 2013-05 EPA 326.0 2002-06
5	Chromium	DIN EN ISO 17294-2 (E 29) 2017-01
6	Cyanide	DIN EN ISO 14403-2 (D 3) 2012-10
7	1,2-dichloroethane	Not used
8	Fluoride	DIN EN ISO 10304-1 (D 20) 2009-07 DIN 38405-D 4 1985-07
9	Nitrate	DIN EN ISO 10304-1 (D 20) 2009-07
10	Plant protection product active ingredients and biocidal product active ingredients	DIN EN ISO 10695 (F 6) 2000-11 DIN 38407-F 35 2010-10 DIN 38407-F 36 2014-09 ISO 16308 2017-09 DIN EN ISO 23631 (F 25) 2006-05

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

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

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

No.	Parameter	Method
		In-house method SOP M 886 2011-07 In-house method SOP M 1231 2014-06
11	Plant protection product active ingredients and biocidal product active ingredients total	Total in relation to the results from: DIN EN ISO 10695 (F 6)2000-11 DIN 38407-F 35 2010-10 DIN 38407-F 36 2014-09 ISO 16308 2017-09 DIN EN ISO 23631 (F 25) 2006-05 In-house method SOP M 886 2011-07 In-house method SOP M 1231 2014-06
12	Mercury	DIN EN 1483 (E 12) 2007-07 DIN EN ISO 12846 (E 12) 2012-08
13	Selenium	DIN 38405-D 23 1994-10 DIN EN ISO 17294-2 (E 29) 2017-01
14	Tetrachloroethene and trichloroethylene	Not used
15	Uranium	DIN EN ISO 17294-2 (E 29) 2017-01

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

No.	Parameter	Method
1	Antimony	DIN EN ISO 11885 (E 22) 2009-09 DIN EN ISO 17294-2 (E 29) 2017-01
2	Arsenic	DIN EN ISO 17294-2 (E 29)2017-01 ISO 17378-2 2014-02
3	Benzo[a]pyrene	Not used
4	Lead	DIN 38406-E 6 1998-07 DIN EN ISO 17294-2 (E 29) 2017-01
5	Cadmium	DIN EN ISO 17294-2 (E 29) 2017-01 DIN EN ISO 5961 (E 19) 1995-05
6	Epichlorohydrin	DIN EN 14207 (P 9) 2003-09
7	Copper	DIN EN ISO 11885 (E 22) 2009-09 DIN EN ISO 17294-2 (E 29) 2017-01
8	Nickel	DIN EN ISO 17294-2 (E 29) 2017-01
9	Nitrite	DIN EN ISO 10304-1 (D 20) 2009-07 DIN EN 26777 (D 10) 1993-04
10	Polycyclic aromatic hydrocarbons (PAH)	Not used
11	Trihalomethanes (THM)	Not used
12	Vinyl chloride	Not used

ANNEX 3: INDICATOR PARAMETERS

Part I: General indicator parameters

No.	Parameter	Method
1	Aluminium	DIN EN ISO 11885 (E 22) 2009-09 DIN EN ISO 17294-2 (E 29) 2017-01
2	Ammonium	DIN EN ISO 11732 (E 23) 2005-05
3	Chloride	DIN EN ISO 10304-1 (D 20) 2009-07
4	Clostridium perfringens (including spores)	DIN EN ISO 14189 (K 24) 2016-11
5	Coliform bacteria	DIN EN ISO 9308-1 2017-09 DIN EN ISO 9308-2 (K 6-1) 2014-06
6	Iron	DIN EN ISO 11885 (E 22) 2009-09
7	Colouring (spectral absorption coefficient Hg 436 nm)	DIN EN ISO 7887 (C 1) 2012-04
8	Odour (as TON)	DIN EN 1622 (B 3) 2006-10
9	Taste	DIN EN 1622 (B 3) 2006-10
10	Colony count at 22 °C	DIN EN ISO 6222 (K 5) 1999-07 TrinkwV Section 15 (1c)
11	Colony count at 36 °C	DIN EN ISO 6222 (K 5) 1999-07 TrinkwV Section 15 (1c)
12	Electrical conductivity	DIN EN 27888 (C 8) 1993-11
13	Manganese	DIN EN ISO 11885 (E 22) 2009-09
14	Sodium	DIN EN ISO 11885 (E 22) 2009-09
15	Organically bound carbon (TOC)	DIN EN 1484 (H 3) 1997-08
16	Oxidisability	DIN EN ISO 8467 (H 5) 1995-05
17	Sulphate	DIN EN ISO 10304-1 (D 20) 2009-07
18	Turbidity	DIN EN ISO 7027-1 2016-11
19	Hydrogen ion concentration	DIN EN ISO 10523 (C 5) 2012-04
20	Calcite dissolving capacity	DIN 38404-C 10 2012-12 (Calculation Method 3)

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

Parameter	Method
Legionella spec.	ISO 11731 2017-05 UBA Recommendation 18.12.2018 on systemic analysis of drinking water installations for legionella in accordance with the German Drinking Water Ordinance – Sampling, examination and indication of the result

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

Not used

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

Additional periodic testing

Parameter	Method
Calcium	DIN EN ISO 11885 (E 22) 2009-09
Potassium	DIN EN ISO 11885 (E 22) 2009-09
Magnesium	DIN EN ISO 11885 (E 22) 2009-09
Acid and base capacity	DIN 38409-H 7 2005-12
Phosphate	DIN EN ISO 6878 (D 11) 2004-09 (Modification: Automated implementation with the Ganimede P (Hach-Lange method))

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

3 Analysis of liquid carbon dioxide and technical gases

ISBT Procedure 16.0 2010-11	Evaluation of the appearance, smell and taste of carbon dioxide in water
ISBT Procedure 2.0 2010-11	Determination of the purity of carbon dioxide
ISBT Procedure 3.0 2010-11	Determination of moisture content in carbon dioxide
ISBT Procedure 6.0 2010-11	Determination of ammonia content in carbon dioxide
ISBT Procedure 7.0 2010-11	Determination of nitrogen monoxide and nitrogen dioxide content in carbon dioxide
ISBT Procedure 8.0 2010-11	Gravimetric determination of the total content of non-volatile residues and the content of non-volatile organic residues in carbon dioxide
ISBT Procedure 9.0 2010-11	Determination of phosphine in carbon dioxide
ISBT Procedure 1.4 2010-11	Sampling of liquid carbon dioxide with adsorber tubes (activated carbon, DNPH cartridge)

ISBT Procedure 5.0 2010-11	Determination of carbon monoxide content in carbon dioxide
ISBT Procedure 14.0 2010-11	Determination of sulphur components in carbon dioxide (Modification: *Determination by GC-MS*)
ISBT Procedure 5.0 2010-11	Determination of hydrogen sulphide content in carbon dioxide
ISBT Procedure 5.0 2010-11	Determination of sulphur dioxide content in carbon dioxide
ISBT Procedure SM-3 2010-11	Determination of phosphine in carbon dioxide
In-house method SOP M 1014 2011-08	Measurement of oxygen content of carbon dioxide and other gases with the Panametrics O2X1
In-house method SOP M 1019 2011-08	Determination of volatile hydrocarbons in gas samples by HS-GC/FID
In-house method SOP M 1021 2010-11	Determination of aldehydes in air and solid samples by HPLC-DAD
In-house method SOP M 3733 2020-02	Microbiological analysis of technical gases
In-house method SOP M 204 2020-02	Orientation identification for determination of bacterial genus
In-house method SOP M 205 2017-07	Identification of microorganisms for determination of species
In-house method SOP M 1335 2020-10	Identification of microorganisms with the MicroSeq ID System with MicroSeq ID Analysis Software V2.0/ Sequencing Analysis Software V5.3/ Genetic Analyzer Data Collection Software V 5.2 (Kits: MicroSeq 500 16s-rDNA Sequencing Kit / MicroSeq D2 LSU rDNA Fungal Sequencing Kit)
In-house method SOP M 3435 2019-11	Identification of microorganisms with the MALDI Biotyper System with software MBT Compass HT V5.0.0
In-house method SOP G 478 2020-11	Standard operating procedure for the Vitek 2 Compact 60 device with Vitek software V9.02 and Vitek 2 compact identification cards

4 Analysis of soils, sludges, sediments, waste and materials for recycling, ashes and slags and their eluates

4.1 Sampling

DIN ISO 10381-1 2003-08	Soil quality – Sampling – Part 1: Guidance on the design of sampling programmes
DIN ISO 10381-2 2003-08	Soil quality – Sampling – Part 2: Guidance on sampling techniques
DIN ISO 10381-3 2002-08	Soil quality – Sampling – Part 3: Guidance on safety
DIN ISO 10381-4 2004-04	Soil quality – Sampling – Part 4: Guidance on the procedure for investigation of natural, near-natural and cultivated sites
E DIN ISO 10381-8 2004-01	Soil quality – Sampling – Part 8: Guidance on sampling of stockpiles
DIN 4021 1990-10	Exploration by excavation and borings; sampling
DIN 4030-2 2008-06	Assessment of water, soil and gases for their aggressiveness to concrete; sampling and analysis of water and soil samples
DIN 38414-S 1 1987-08	Sampling of sludges
DIN 38414-S 11 1987-08	Sampling of sediments
AbfKlärV, Annex 1 1992-06	Sampling of sewage sludges
AbfKlärV, Annex 1 1992-06	Sampling of soil intended for agriculture
BioAbfV Annex 3 Section 4 (5), 1998-09	Sampling of biowaste
LAGA PN 98 2002-01	Basic rules for the taking of samples from solid and semi-solid waste and deposited materials

4.2 Sample pretreatment and sample preparation

DIN EN 12457-4 2003-04	Characterisation of waste – Leaching; Compliance test for leaching of granular waste materials and sludges – Part 4: One stage batch test at a liquid to solid ratio of 10 l/kg for materials with particle size below 10 mm (without or with size reduction)
DIN EN 12880 (S 2a) 2001-02	Determination of water content and dry residue or dry matter
DIN EN 13346 (S 7) 2001-04	Digestion using aqua regia for subsequent determination of the acid-soluble portion of metals
DIN EN 15935 2012-11	Sludge, treated biowaste, soil and waste – Determination of loss on ignition
DIN EN 15934 2012-11	Sludge, treated biowaste, soil and waste – Calculation of dry matter fraction after determination of dry residue or water content
DIN EN 16174 2012-11	Sludge, treated biowaste and soil – Digestion of aqua regia soluble fractions of elements
DIN 19747 2009-07	Investigation of solids – Pretreatment, preparation and processing of samples for chemical, biological and physical investigations

4.3 Physical and physico-chemical parameters

DIN EN 15933 (S5) 1998-06	Sludge, treated biowaste and soil – Determination of pH
DIN EN 15935 2012-11	Sludge, treated biowaste, soil and waste – Determination of loss on ignition
DIN EN ISO 17892-4 2017-04	Geotechnical investigation and testing – Laboratory testing of soil – Part 4: Determination of particle size distribution

4.4 Inorganic parameters

4.4.1 Anions

DIN 4030-2 2008-06	Assessment of water, soil and gases for their aggressiveness to concrete – Part 2: Sampling and analysis of water and soil samples
DIN 51084 2008-11	Testing of oxidic raw and basic materials for ceramic, glass and glazes – Determination of fluoride content (Modification for soils: *Fusion and ionometric measurement*)

4.4.2 Elements

4.4.2.1 By AAS (CV-AAS, HG-AAS, GF-AAS) *

DIN 38405-D 32 2000-05	Determination of antimony by atomic absorption spectrometry (Modification for soils: *Determination from aqua regia extraction solutions in accordance with DIN ISO 11466, compensation of matrix failures*)
DIN EN ISO 12846 2012-08	Water quality – Determination of mercury – Method using atomic absorption spectrometry (AAS) with and without enrichment
ISO 17378-2 2014-02	Water quality –Determination of arsenic and antimony – Part 2: Method using hydride generation atomic absorption spectrometry (HG-AAS)

4.4.2.2 By ICP

DIN EN ISO 17294-2 (E 29) 2017-01	Water quality – Application of inductively coupled plasma mass spectrometry (ICP-MS) – Part 2: Determination of 62 elements (Modification for soils: *Determination in aqua regia extraction solutions in accordance with DIN ISO 11466, compensation of matrix solutions*)

DIN EN ISO 11885 (E 22) 2009-09	Water quality – Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES) (Modification for soils: *Determination in aqua regia extraction solutions in accordance with DIN ISO 11466, compensation of matrix solutions*)

4.4.2.3 By photometry

DIN EN 15192 2007-02	Characterisation of waste and soil – Determination of chromium(VI) in solid material by alkaline digestion and ion chromatography with spectrophotometric detection

4.5 Organic substances

4.5.1 Sample preparation

In-house method SOP M 3159 2014-09	Extraction of soil samples for subsequent analysis using water methods

4.5.2 By gas chromatography with conventional detectors

In-house method SOP M 207 2019-05	Determination of highly volatile N-nitrosamines by steam vacuum distillation

4.5.3 By gas chromatography with mass selective detectors [MS, MS/MS] **

In-house method SOP M 886 2011-07	Determination of pesticides (e.g. alachlor, amitraz, fonofos, captafol, phosmet, triallate) in water by GC-MS with large volume injection (Modification: *Processing in accordance with in-house method SOP M 3159*)
In-house method SOP M 1139 2014-06	Determination of short chain chlorinated paraffin (SCCP) in textiles, leather and plastics by GC-ECD or GC-MS (NCI)
In-house method SOP M 3651 2019-10	Determination of selected organotin compounds in soils, sludges and sediments based on DIN EN ISO 17353

4.5.5 By liquid chromatography with mass selective detectors [MS, MS/MS] **

DIN 38414-S 14 2011-08	Determination of selected polyfluorinated compounds (PFC) in sludge, compost and soil – Method using high performance liquid chromatography and mass spectrometric detection (HPLC-MS/MS)
In-house method SOP M 1230 2009-06	Determination of pesticides (e.g: bentazon, desethylatrazine, metolachlor, dimethylsulfamide) by LC/MS-MS (direct measurement) (Modification: *Processing in accordance with in-house method SOP M 3159*)
In-house method SOP M 2485 2011-07	Determination of polar organic residues (e.g. medicinal products, X-ray contrast media, sweeteners, preservatives, microcystins, anti-corrosion agents, etc.) in water by LC-MS/MS (Modification: *Processing in accordance with in-house method SOP M 3159*)

4.6 Summary indices of actions and mixtures of substances

DIN ISO 11260 2018-11	Soil quality – Determination of effective cation exchange capacity and base saturation level using barium chloride solution
DIN ISO 13536 1997-04	Soil quality – Determination of the potential cation exchange capacity and exchangeable cations using barium chloride solution buffered at pH = 8.1
DIN 38414-S 18 1989-11	Determination of adsorbed organically bound halogens (AOX)

4.7 Microbiological methods *

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 (Application to: *Soils, material samples and waste*)

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 (Application to: *Soils, material samples and waste*)
DIN ISO 16649-2 2020-12	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 (Application to*: Soils, material samples and waste*)
In-house method SOP M 3734 2020-02	Microbiological analysis of material samples

4.7.1 Identification methods for microorganisms

In-house method SOP M 204 2020-02	Orientation identification for determination of bacterial genus
In-house method SOP M 205 2017-07	Identification of microorganisms for determination of species
In-house method SOP M 1335 2020-10	Identification of microorganisms with the MicroSeq ID System with MicroSeq ID Analysis Software V2.0/ Sequencing Analysis Software V5.3/ Genetic Analyzer Data Collection Software V 5.2 (Kits: MicroSeq 500 16s-rDNA Sequencing Kit / MicroSeq D2 LSU rDNA Fungal Sequencing Kit)
In-house method SOP M 3435 2019-11	Identification of microorganisms with the MALDI Biotyper System with software MBT Compass HT V5.0.0
In-house method SOP G 478 2020-11	Standard operating procedure for the Vitek 2 Compact 60 device with Vitek software V9.02 and Vitek 2 compact identification cards

4.8 Bioanalytical methods

4.8.1 Biodegradation

DIN EN ISO 9888 (L 25) 1999-11	Water quality – Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium – Static test (Zahn-Wellens method)

DIN EN ISO 11734 (L 47) 1998-11	Water quality – Determination of the “ultimate” anaerobic biodegradability of organic compounds in digested sludge – Method by measurement of biogas production
DepV Annex 4 No 3.3.2 2009	Gas formation rate in fermentation test over 21 days (GB 21)

4.8.2 Ecotoxicology

DIN EN ISO 9509 2006-10	Method for determination of nitrification inhibition of microorganisms in activated sludge by substances and waste water
OECD Guideline 209 2010-07	Effects on Biotic Systems; Activated Sludge, Respiration Inhibition Test

4.8.3 In vitro toxicity tests

OECD Guideline 431 2013-10	In vitro skin corrosion: reconstructed human epidermis (RHE) test method
OECD Guideline 432 2004-04	In vitro 3T3 neutral red uptake (NUR) photoxicity test - in vitro photoxicicy screening test

5 Airborne pollutants in indoor air

5.1 Organic parameters

In-house method SOP M 2547 2011-07	Determination of amines (e.g. dimethylamine, aniline, ethylenediamine) in aqueous solution by LC-MS/MS
DGUV 213-523, BGI 505-23 1992-09	Method for determination of nitrosamines

5.2 Microbiological airborne pollutants in indoor air, sampling and analysis

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

BIA 9420 2003-04	Method for determination of mould concentration
BIA 9430 2004-01	Method for determination of bacteria concentration in air
VDI 6022 Blatt 1 2018-01	Hygiene requirements for ventilation and air-conditioning systems and units; sections 8.1 to 8.3 (sampling of water in HVAC systems and equipment, indoor air and surfaces)
In-house method SOP M 111 2015-08	Determination of airborne bacteria with RCS device
In-house method SOP M 3735 2020-02	Microbiological testing for airborne pollutants in indoor air

5.2.1 Identification methods for microorganisms

In-house method SOP M 204 2020-02	Orientation identification for determination of bacterial genus
In-house method SOP M 205 2017-07	Identification of microorganisms for determination of species
In-house method SOP M 1335 2020-10	Identification of microorganisms with the MicroSeq ID System with MicroSeq ID Analysis Software V2.0/ Sequencing Analysis Software V5.3/ Genetic Analyzer Data Collection Software V 5.2 (Kits: MicroSeq 500 16s-rDNA Sequencing Kit / MicroSeq D2 LSU rDNA Fungal Sequencing Kit)
In-house method SOP M 3435 2019-11	Identification of microorganisms with the MALDI Biotyper System with software MBT Compass HT V5.0.0
In-house method SOP G 478 2020-11	Standard operating procedure for the Vitek 2 Compact 60 device with Vitek software V9.02 and Vitek 2 compact identification cards

6 Analysis of chemical and technical products

6.1 Sample preparation

DIN EN ISO 12677 2013-02	Chemical analysis of refractory products by X-ray fluorescence (XRF) – Fused cast bead method (Here: *Application to technical products)*
ISO 13898-1 1997-06	Steel and iron – Determination of nickel, copper and cobalt contents – Inductively coupled plasma atomic emission spectrometric method – Part 1: General requirements and sample dissolution
In-house method SOP M 1215 2007-09	Microwave digestion of solid samples for the determination of heavy metals by ICP-MS, ICP-OES or AAS
PD CR 12471 2002-09	Quick test for nickel release from alloys and coatings in items that come into direct and prolonged contact with the skin

6.2 Physical or physico-chemical test methods

OECD Guideline 101 1981-05	UV-VIS Absorption Spectra
OECD Guideline 102 1995-07	Melting Point
OECD Guideline 103 1995-07	Boiling Point
OECD Guideline 105 1995-07	Water Solubility
OECD Guideline 107 1995-07	Partition-coefficient (n-octanol/water): Shake Flask Method
OECD Guideline 117 2011-04	Partition-coefficient (n-octanol/water): HPLC-Method

OECD Guideline 121 2001-01	Estimation of the Adsorption Coefficient (K_{oc}) on soil and on sewage sludge using High Performance Liquid Chromatography (HPLC)
DIN EN ISO 787-11 1995-10	General methods of test for pigments and extenders – Part 11: Determination of tamped volume and apparent density after tamping
DIN EN 12902 2005-02	Products used for treatment of water intended for human consumption – Inorganic supporting and filtering materials – Methods of test

6.3 Inorganic parameters

6.3.1 By AAS

DIN EN 62321 2009-12	Electrotechnical products – Determination of levels of six regulated substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers)
DIN EN 10188 1990-04	Chemical analysis of ferrous materials; determination of chromium in steels and iron; flame atomic absorption spectrometric method

6.3.2 By ICP-OES **

DIN EN 62321 2009-12	Electrotechnical products – Determination of levels of six regulated substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers)
ISO 10278 1995-04	Steel - Determination of maganese content - Inductively coupled plasma atomic emission spectrometric method
ISO 11535 2006-12	Iron ores - Determination of various elements - Inductively coupled plasma atomic emission spectrometric method
ISO 13898-2 1997-06	Steel and iron – Determination of nickel, copper and cobalt contents – Inductively coupled plasma atomic emission spectrometric method – Part 2: Determination of nickel content

ISO 13898-3 1997-06	Steel and iron – Determination of nickel, copper and cobalt contents – Inductively coupled plasma atomic emission spectrometric method – Part 3: Determination of copper content
In-house method SOP M 3764 2019-12	Determination of platinum in polymers by inductively coupled plasma atomic emission spectrometry (ICP-OES)
In-house method SOP M 810 2015-04	Determination of silicone oil in glass syringes

6.3.3 By ICP-MS

DIN EN ISO 17294-2 (E 29) 2017-01	Water quality – Application of inductively coupled plasma mass spectrometry (ICP-MS) – Part 2: Determination of 62 elements (Modification: *Determination in microwave digestions, matrix adjustment*)

6.3.4 By RFA **

DIN EN 62321 2009-12	Electrotechnical products – Determination of levels of six regulated substances (lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polybrominated diphenyl ethers)
In-house method SOP M 671 2008-02 DIN EN ISO 12677 2013-02	Determination of calcium and phosphate in calcium phosphate by X-ray fluorescence analysis Chemical analysis of refractory products by X-ray fluorescence (XRF) – Fused cast-bead method

6.3.5 By photometry

DIN EN ISO 12460-5 2016-05	Wood-based panels – Determination of formaldehyde release – Part 5: Extraction method (called the perforator method)

6.3.6 By titrimetry **

ISO 2597-1 2006-5	Iron ores - Determination of total iron content - Part 1: Titrimetric method after tin(II) chloride reduction
In-house method SOP M 753 2004-01	Iodometric determination of the iron content in iron oxide pigments

In-house method SOP M 1946 2019-05	Acidimetric determination of the content of enriched lithium (7Li)-hydroxide

6.3.7 By ion chromatography **

DIN 53474 2017-12	Testing of plastics, rubber and elastomers – Determination of the chlorine content (Wickbold combustion) (Modification: *Determination of chlorine content by IC*)
In-house method SOP M 1172 2018-04	Determination of chromium(VI) in plastic samples by IC after alkaline extraction
IEC 62321-7-2 2017-03	Determination of certain substances in electrotechnical products - Part 7-2: Hexavalent chromium - Determination of hexavalent chromium (Cr(VI)) in polymers and electronics by the colorimetric method (Modification: *Determination by ion chromatography and post-column derivatisation*)
DIN EN ISO 3613 2002-01	Cromate conversion coating on zinc, cadmium, aluminium-zinc alloys and zinc-aluminium alloys - Test methods (Modification: *Determination by ion chromatography and post-column derivatisation*)
In-house method SOP M 3700 2020-12	Determination of organic acids in air samples, water, aqueous extracts, cleaning agents and migrates BY ion chromatography and HPLC

6.4 Organic parameters

In-house method SOP M 2484 2011-07	Photometric determination of total formaldehyde after steam distillation
In-house method SOP M 3663 2020-12	Determination of extractable organically bonded halogens (F, Cl, Br, I)

6.4.1 By gas chromatography with mass selective detectors [MS, MS/MS] **

In-house method SOP M 1139 2019-09	Determination of short chain chlorinated paraffin (SCCP) in textiles, leather and plastics by GC-MS (NCI)
In-house method SOP M 3131 2020-11	Determination of organotin compounds in textiles, leather and plastic materials based on DIN EN ISO 17353

CPSC-CH-C1001-09.4 2010-04	Test Method: CPSC-CH-C1001-09.4 - Standard Opertating Procedure for Determination of Phthalates
In-house method SOP M 889 2015-01	Determination of plasticiser compounds in complex matrices
IEC 62321-6 2015-06	Determination of certain substances in electrotechnical products - Part 6: Polybrominated biphenyls and polybrominated diphenyl ethers in polymers by gas chromatography - mass spectrometry (GC-MS)
IEC 62321-9 (Draft) 2016-05	Determination of certain substances in electrotechnical products - Part 9: Hexabromocyclododecan in polymers by high pressure liquid chromatography-mass spectrometry (HPLC-MS) (Modification: *measurement using GC-MS/MS*)
IEC EN 62321-8 2014-01	Determination of certain substances in electrotechnical products – Part 8: Phthalates in polymers with pyrolysis gas chromatography mass spectrometry (Py-GC-MS), ion accumulation mass spectrometry (IAMS), gas chromatography mass spectrometry (GC-MS) and liquid chromatography mass spectrometry (LC-MS) (IEC 111/321/CD:2013)
AfPS GS 2014:01 2014-01	Testing and evaluation of polycyclic aromatic hydrocarbons (PAHs)
In-house method SOP M 3498 2019-11	Determination of selected aromatic amines from azo dyes by GC-MS and UPLC-DAD
In-house method SOP M 3486 2019-06	Determination of 4-aminoazobenzene by GC-MS and UPLC-DAD
ZEK 01.2-08 2011-11	Testing and evaluation of polycyclic aromatic hydrocarbons (PAHs)

6.4.2 By Liquid chromatography with conventional detectors

In-house method SOP M 3498 2019-10	Determination of selected aromatic amines from azo dyes by GC-MS and UPLC-DAD
In-house method SOP M 3486 2019-06	Determination of 4-aminoazobenzene by GC-MS and UPLC-DAD
In-house method SOP M 3722 2020-12	Determination of quinoline in textiles, shoes and chemical products by HPLC-DAD/MS

6.4.3 By liquid chromatography with mass selective detectors

In-house method SOP M 1027 2015-10	Determination of alkylphenol ethoxylates by LC-MS in materials (extraction with THF or methanol)
In-house method SOP M 3116 2014-06	Determination of alkylphenols by LC-MS in various materials (extraction with THF or methanol)
In-house method SOP M 3722 2020-12	Determination of quinoline in textiles, shoes and chemical products by HPLC-DAD/MS

6.5 Summary parameters

In-house method SOP M 3663 2019-10	Determination of extractable organically bonded halogens (F, Cl, Br, I)
In-house method SOP M 3691 2019-10	Determination of halogens in solid samples

6.6 Bioanalytical methods

6.6.1 Biodegradation

DIN ISO 11266 1997-05	Biodegradation of organic chemicals in soil under aerobic conditions
CEC L-103 Final Draft 2012	Biological Degradability of Lubricants in Natural Environment

6.6.2 In vitro toxicity tests

OECD Guideline 431 Draft revised 2013-10	In vitro skin corrosion: reconstructed human epidermis (RHE) test method
OECD Guideline 432 2004-04	In vitro 3T3 neutral red uptake (NRU) phototoxicity test - In vitro phototoxicity screening test
CytoTox-ONE™ Homogenous Membrane Integrity Assay 2009-05	Determination of the cytotoxic effect of substances using CytoTox-ONE

7 Analysis of foodstuffs

7.1 Sampling

In-house method SOP M 108 2003-09	Sampling of water used for the production of foodstuffs and cosmetics
In-house method SOP M 109 2004-05	Sampling of unpackaged ice cream
In-house method SOP M 116 2013-02	Sampling of foodstuffs

7.2 Sensory methods

ASU L 00.90-6 1997-09	Analysis of foodstuffs – Sensory test methods – Basic descriptive test
In-house method SOP M 2508 2013-12	Determination of the fill quantity and drained weight of food packages in accordance with the guidelines for the volume examination of prepackaged goods

7.3 Sample preparation

BVL L 00.00-19/1 2015-06	Analysis of foodstuffs – Determination of trace elements in foodstuffs – Pressure digestion
In-house method SOP M 406 2020-01	Preparation of foodstuffs for microbiological analysis

7.4 Inorganic parameters

7.4.1 By ion chromatography [UV/VIS, conductivity, ED]**

DIN EN 12014-2 2018-02	Determination of nitrate and/or nitrite content – Part 2: HPLC/IC method for the determination of nitrate content of vegetables and vegetable products (Modification: *Here only application of IC*)
In-house method SOP M 3701 2019-09	Determination of sugar alcohols in foodstuffs by ion chromatography and electrochemical detection

In-house method SOP M 3175 2020-12	Determination of galactose and lactose in trace amounts in lactose-free foodstuffs by HPAE-PAD
In-house method SOP M 3388 2019-04	Determination of glucose, fructose, sucrose, maltose and maltotriose in beer and sweet drinks
DIN EN ISO 3613 2011-04	Metallic and other inorganic coatings – Chromate conversion coatings on zinc, cadmium, aluminium-zinc alloys and zinc-aluminium alloys – Test methods

7.4.2 By photometry

In-house method SOP M 511 2013-04	Photometric determination of iodine in foodstuffs
MEBAK VI 2002	Total carbohydrates in beer (Modification: *Application also to beer mixes and non-alcoholic soft drinks*)

7.4.3 By ICP-OES *

DIN EN 16943 2017-07	Foodstuffs – Determination of calcium, copper, iron, magnesium, manganese, phosphorus, potassium, sodium, sulphur and zinc by ICP-OES *(extension to Cr and Mo*)
In-house method SOP M 991 2008-12	Determination of minerals in food supplements
In-house method SOP M 992 2006-09	Determination of selenium in food supplements

7.4.4 By ICP-MS *

DIN EN 15763 2010-04	Foodstuffs – Determination of trace elements – Determination of arsenic, cadmium, mercury and lead in foodstuffs by inductively coupled plasma mass spectrometry (ICP-MS) after pressure digestion
BVL L 00.00-93 2008-12	Analysis of foodstuffs – Determination of iodine in foodstuffs – ICP-MS method

7.4.5 By AAS [CV-AAS, HG-AAS]*

BVL L 00.00-19/4 2003-12	Analysis of foodstuffs – Determination of trace elements in foodstuffs – Part 4: Determination of mercury by cold-vapour atomic absorption spectrometry (CVAAS) after pressure digestion
ASU L 00.00-19/6 2001-07	Determination of trace elements in foodstuffs; Part 6: Determination of arsenic by atomic absorption spectrometry (AAS)

7.4.6 Other inorganic parameters

In-house method SOP M 514 2019-02	Determination of fluorine content in biological samples by fluoride ion-selective electrode after alkaline fusion
In-house method SOP M 3596 2020-10	Gravimetric determination of carbon dioxide in baking powder and comparable solids

7.5 Organic parameters

7.5.1 By gas chromatography with conventional detectors [TEA, FID] *

ASU L 00.00-17 1987-11	Analysis of foodstuffs – Determination of nitrosamines in foodstuffs
ASU L 36.00-6 1986-11	Analysis of foodstuffs – Determination of nitrosamines in beer
DKFZ Method 1980-01	Determination of N-nitrosamines in malt by GC-TEA
LUA Braunschweig Version 01 1995-02	Determination of volatile nitrosamines in foodstuffs (specifically baby food) by GC-TEA
In-house method SOP M 207 2019-05	Determination of highly volatile N-nitrosamines by steam vacuum distillation

In-house method SOP M 3708 2019-06	Quantitative determination of residual solvents in oil and grease samples by HS-GC-FID issue status

7.5.2 By gas chromatography with mass selective detectors [MS, MS/MS] *

In-house method SOP M 416 2016-05	Determination of complexing agents by gas chromatography/mass spectrometry
In-house method SOP M 371 2014-06	Determination of plasticiser compounds in water and migrates
BVL L 46.00-4 2016-03	Analysis of foodstuffs – Determination of furan in coffee and coffee products with headspace gas chromatography and mass spectrometry

7.5.3 By liquid chromatography with mass selective detectors [MS, MS/MS] **

In-house method SOP M 1054 2009-04	Determination of acrylamide in food samples by LC-MS/MS
In-house method SOP M 1227 2019-09	Determination of PFCs by LC-MS/MS
In-house method SOP M 3412 2018-04	Determination of natamycin in wine by LC-MS / MS

7.6 Microbiological analysis

7.6.1 Sample pre-treatment for microbiological analysis of bacteria, yeasts and moulds **

In-house method SOP M 406 2020-01	Preparation of foodstuffs for microbiological analysis
DIN EN ISO 6887-1 2017-07	Microbiology of the food chain – Preparation of test samples, initial suspension and decimal dilutions for microbiological examination – Part 1: General rules for the preparation of the initial suspension and decimal dilutions
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 6887-3 2017-07	Microbiology of the food chain – Preparation of test samples, initial suspension and decimal dilutions for microbiological examination – Part 3: Specific rules for the preparation of fish and fish products
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 the food chain – Preparation of test samples, initial suspension and decimal dilutions for microbiological examination – Part 5: Specific rules for the preparation of milk and milk products

7.6.2 Cultural methods (spatula plate, pour plate, surface plating, MPN and detection methods) **

In-house method SOP M 407 2020-02	Quantitative and qualitative methods for microbiological analysis of foodstuffs
In-house method SOP M 1725 2020-02	Microbiological analysis of beverages and beverage substances for beverage pests
In-house method SOP M 2333 2020-02	Microbiological analysis of sugar
In-house method SOP M 3732 2020-02	Detection and enumeration of alicyclobacilli
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 2020-08	Horizontal method for the detection of Salmonella ssp.

DIN EN ISO 6888-1 2019-06	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) in foodstuffs – Part 1: Technique using Baird-Parker agar medium
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 °C
DIN EN ISO 7937 2004-11	Horizontal method for the enumeration of Clostridium perfringens - Colony-count technique
DIN 10106 2017-04	Microbiological analysis of meat and meat products – Determination of Enterococcus faecalis and Enterococcus faecium; spatula method (reference method)
DIN 10198 2010-07	Microbiological analysis of milk – Determination of presumptive Bacillus cereus – Colony count technique at 37 °C
DIN EN ISO 11290-1 2017-09	Microbiology of food and animal feeding stuffs – Horizontal method for the detection and enumeration of Listeria monocytogenes – Part 1: Detection method
DIN EN ISO 11290-2 2017-09	Microbiology of food and animal feeding stuffs – Horizontal method for the detection and enumeration of Listeria monocytogenes – Part 2: Counting methods
ISO 15213 2003-05	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of sulfite-reducing bacteria growing under anaerobic conditions
ISO 15214 1998-08	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of mesophilic lactic acid bacteria - Colony-count technique at 30 °C
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 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
DIN ISO 21528-1 2017-09	Microbiology of food and animal feeding stuffs – Horizontal methods for the detection and enumeration of Enterobacteriaceae – Part 1: Detection and enumeration by MPN technique with pre-enrichment
DIN ISO 21528-2 2019-05	Microbiology of food and animal feeding stuffs – Horizontal methods for the detection and enumeration of Enterobacteriaceae – Part 2: Colony-count method
ASU L 00.00-20 2018-03	Horizontal method for the detection, enumeration and serotyping of Salmonella – Part 1: Detection of Salmonella spp.
ASU L 00.00-25 2011-01	Determination of presumptive Bacillus cereus in foodstuffs – Colony-count technique
ASU L 00.00-57 2006-12	Method for the enumeration of Clostridium perfringens in foodstuffs – Colony-count technique
ASU L 00.00-88/1 2015-06	Horizontal method for the enumeration of microorganisms – Part 1: Colony count at 30 C by the pour plate technique
ASU L 00.00-88/2 2015-06	Horizontal method for the enumeration of microorganisms – Part 2: Colony count at 30 °C by the surface plating technique
ASU L 01.00-2 1991-12 and Corrigendum 2002-12	Determination of coliforms in milk, milk products, butter, cheese and ice cream – Method with liquid culture medium
ASU L 01.00-3 1987-03	Determination of coliforms in milk, milk products, butter, cheese and ice cream – Method with solid culture medium
ASU L 01.00-25 1997-09 and Corrigendum 2002-12	Determination of Escherichia coli in milk, milk products, butter, cheese and ice cream – Method with liquid culture medium
ASU L 01.00-37 1991-12	Determination of the number of yeasts and moulds in milk and dairy products – Reference method
ASU L 01.00-57 1995-01	Determination of the bacterial count in milk and milk products – Spatula method

ASU L 01.00-72 2011-01	Determination of presumptive Bacillus cereus in milk and milk products – Part 1: Colony-count technique at 37 °C
ASU L 05.00-5 1990-06	Determination of Enterobacteriaceae in eggs, egg products, mayonnaises, emulsified sauces and cold ready-made sauces – Pour method (reference method)
ASU L 06.00-24 2019-12-11	Determination of Enterobacteriaceae in meat – Spatula method (reference method)
ASU L 06.00-32 2018-10	Determination of Enterococcus faecalis and Enterococcus faecium in meat and meat products – Spatula method (reference method)
ASU L 06.00-35 2017-10	Determination of lactic acid bacteria growing under aerobic conditions in meat and meat products – Spatula method (reference method)
ASU L 06.00-39 1994-05	Determination of mesophilic sulphite-reducing clostridia in meat and meat products – Pour plate method (reference method)
ASU L 06.00-43 2011-06	Enumeration of Pseudomonas spp. in meat and meat products
ASU L 20.01-10 1992-12	Determination of lactic acid bacteria growing under aerobic conditions in mayonnaises, emulsified sauces and cold ready-made sauces – Spatula method (reference method)
ASU L 42.00-2 1987-03	Determination of the bacterial count in ice cream – Pour method
ASU L 42.00-3 1987-03	Determination of the bacterial count in ice cream – Surface-spread method

7.6.3 Fluorochemical methods *

ASU L 01.00-54 1992-12	Determination of Escherichia coli in milk and milk products – Fluorescence-optical technique with parallel determination of coliform bacteria
ASU L 06.00-36 2020-02	Determination of Escherichia coli in meat and meat products – Fluorescence-optical colony-count technique using membrane filter spatula method (reference method)

7.6.4 Biochemical methods for the identification of microorganisms **

In-house method SOP M 204 2020-02	Orienting identification for determination of bacterial genus by Gram staining
In-house method SOP M 205 2017-07	Identification of microorganisms for determination of species using Vitek 2
In-house method SOP G 478 2020-11	Standard operating procedure for the Vitek 2 Compact 60 device with Vitek software V9.02 and Vitek 2 compact identification cards

7.6.5 Mass spectrometric analysis for the identification of microorganisms

In-house method SOP M 3435 2020-12	Identification of microorganisms with the MALDI Biotyper System with software MBT Compass HT V5.0.0

7.7. Molecular biological tests

7.7.1 Detection of bacteria by real-time PCR *

ASU L 00.00-98 2007-04	Analysis of foodstuffs – Qualitative detection of Salmonella in foodstuffs – Real-time PCR method
ASU L 00.00-95 (V) 2006-12	Analysis of foodstuffs – Qualitative detection of Listeria monocytogenes in foodstuffs – Real-time PCR method
DIN 10135 2013-05	Microbiology of food and animal feeding stuffs – Polymerase chain reaction for the detection of food-borne pathogens – Method for the detection of salmonella

7.7.2 Identification of bacteria, yeasts and moulds by conventional PCR

In-house method SOP M 1335 2020-10	Identification of microorganisms with the MicroSeq ID System with MicroSeq ID Analysis Software V2.0/ Sequencing Analysis Software V5.3/ Genetic Analyzer Data Collection Software V 5.2 (Kits: MicroSeq 500 16s-rDNA Sequencing Kit / MicroSeq D2 LSU rDNA Fungal Sequencing Kit)

7.8 Immunological methods

7.8.1 Detection of allergens and toxins by enzyme immunoassay (ELISA) methods **

In-house method SOP M 460 2018-12	Determination of allergens and selected compounds by enzyme-linked immunosorbent assay (ELISA)
AgraQuant® Casein ELISA – 10002037 - v22, April 2019	Detection of casein in raw and processed foodstuffs as well as swab samples and rinse waters by ELISA
RIDASCREEN® FAST Ei/Egg R6402 15-12-14	Detection of egg as whole egg powder in foodstuffs, swab samples and rinse water by ELISA
RIDASCREEN® FAST Peanut R6202 18-06-25	Detection of peanut in foodstuffs and swab samples by ELISA
AgraQuant® Gluten G12® - 10001994 - v18, March 2020	Detection of gluten in raw and processed foodstuffs as well as swab samples and rinse waters by ELISA using the G12 antibody (Deviation: *Also feedstuffs*)
RIDASCREEN® FAST Gliadin R7001 15-10-09	Detection of gluten as gliadin in foodstuffs by ELISA using the R5 antibody
RIDASCREEN® Gliadin competitive R7021 16-09-21	Detection of gluten as gliadin in hydrolysed and fermented foodstuffs by ELISA using the R5 antibody in the competitive system
AgraQuant® Hazelnut - 10002006 - v10, June 2019	Detection of hazelnut in raw and processed foodstuffs as well as swab samples and rinse waters by ELISA

RIDASCREEN® FAST Hazelnut R6802 18-01-23	Detection of hazelnut in cereals, bakery products, ice cream and chocolate (Deviation: Also for other foodstuffs)
RIDASCREEN® FAST Crustacean (2nd generation) R7312 16-01-14	Detection of crustaceans in foodstuffs by ELISA
AgraQuant® ß-Lactoglobulin - 10002034 - June 2019	Detection of ß-lactoglobulin in raw and processed foodstuffs as well as swab samples and rinse waters by ELISA
RIDASCREEN® FAST Lupine R6102 16-07-20	Detection of lupin as lupin protein in foodstuffs such as beverages (juice, wine, beer), sausage and meat products, baking mixes, bakery goods, pasta, chocolate, dairy products and ice cream by ELISA (Deviation: *Also other foodstuffs*)
RIDASCREEN® FAST Lysozym R6452 16-08-15	Detection of lysozyme in foodstuffs such as wine, cheese and sausage (Deviation: *Also in milk powder*)
RIDASCREEN® FAST Mandel/Almond R6901 19-04-25	Detection of almonds in food by ELISA
AgraQuant® Milk - 10002080 - v05, April 2019	Detection of milk protein in raw and processed foodstuffs as well as swab samples and rinse waters by ELISA
RIDASCREEN® FAST Senf/Mustard R6152 17-06-21	Detection of mustard as mustard flour in ketchup, sausage and cream cheese by ELISA (Deviation: *Also for other foodstuffs*)
RIDASCREEN® FAST Sesame R7202 17-06-08	Detection of sesame in instant soup, chocolate dessert, baking mix and crackers by ELISA (Deviation: *Also for other foodstuffs*)
RIDASCREEN® FAST Soya R7102 16-07-18	Detection of soy as soy protein in unprocessed and processed foodstuffs and beverages by ELISA
RIDASCREEN® SET Total R4105 17-08-09	Total detection of staphylococcal endotoxins A to E (SET total) in liquid and solid foodstuffs and bacterial cultures by ELISA

8 Environmental samples, fitment and utensils in food areas

8.1 Microbiological analysis

DIN 10113-1 1997-07	Determination of surface colony count on fitment and utensils in food areas – Part 1: Quantitative swab method
DIN 10113-3 1997-07	Determination of surface colony count on fitment and utensils in food areas – Part 3: Semiquantitative method with culture media laminated taking up equipment (squeeze method)
In-house method SOP M 3737 2020-01	Microbiological analysis of environmental samples – (contact plates, swabs, sponges)
In-house method SOP M 3739 2020-02	Testing of dishwashing machines – Commercial dishwashing with multitank-transport dishwashers

9 Analysis of commodity goods, paper and cardboard, toys, including for infants, toddlers and children, and textiles, leather and shoes

9.1 Inorganic parameters

DIN EN 71-3 2018-08	Safety of toys – Part 3: Migration of certain elements
CPSC-CH-E1001-08.3 2012-11	Standard operating procedure for determining total lead (Pb) in children's metal products
CPSC-CH-E1002-08.3 2012-11	Standard operating procedure for determining total lead (Pb) in non-metal children's products
CPSC-CH-E1003-09.1 2011-02	Standard Operating Procedure for Determining Lead (Pb) in Paint and Other Similar Surface Coatings
In-house method SOP M 1215 2007-09	Microwave digestion of solid samples (e.g. cosmetics, plastics, paints, wood) for the determination of heavy metals by ICP-MS, ICP-OES or AAS

DIN EN ISO 11885 (E 22) 2009-09	Water quality – Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES) (Modification: *Determination in microwave digestions, matrix adjustment, migrates*)
DIN EN ISO 17294-2 (E29) 2017-01	Water quality – Application of inductively coupled plasma mass spectrometry (ICP-MS) – Part 2: Determination of selected elements including uranium isotopes (Modification: *Determination in microwave digestions, matrix adjustment, migrates*)
DIN EN ISO 3071 2018-12	Textiles – Determination of pH of aqueous extract
DIN EN ISO 4045 2018-09	Leather – Chemical tests – Determination of pH
DIN EN 1811 2015-10	Reference test method for release of nickel from products intended to come into direct and prolonged contact with the skin
DIN EN ISO 12472 2009-09	Method for the simulation of wear and corrosion for the detection of nickel release from coated items
GOTS Version 5.0 Section 2.4.15 2017-03	Halogenated organic compounds (AOX) in textiles after hot water extraction
PTS-RH 1990-12	Determination of the total content of organic halogen compounds
In-house method SOP M 1744 2009-01	Determination of heavy metals in textiles after extraction with perspiration simulation solution
DIN EN ISO 14184-1 2011-12	Textiles – Determination of formaldehyde – Part 1: Free and hydrolysed formaldehyde (water extraction method)
E DIN 54233-1 2010-02	Testing of textiles – Determination of metals – Part 1: Determination of metals using microwave digestion
DIN 54233-2 2014-07	Testing of textiles – Determination of metals – Part 2: Determination of extractable metals by hydrochloric acid

DIN 54233-3 2010-02	Testing of textiles – Determination of metals – Part 3: Determination of metals extracting by acid synthetic perspiration solution
DIN 54233-4 2014-07	Testing of textiles – Determination of metals – Part 4: Determination of extractable metals by synthetic salivary solution
DIN EN ISO 12460-5 2016-05	Wood-based panels – Determination of formaldehyde release – Part 5: Extraction method (called the perforator method)
PD CR 12471 2002-09	Quick test for nickel release from alloys and coatings in items that come into direct and prolonged contact with the skin
In-house method M3663 2020-12	Determination of extractable organically bonded halogens (F, Cl, Br, I)
In-house method M3691 2020-05	Determination of halogens (F, Cl, Br, I) in solid samples
In-house method SOP M 2484 2011-07	Photometric determination of total formaldehyde after steam distillation
ISO 11480 2017-05	Pulp, paper and board – Determination of total chlorine and organically bound chlorine
DIN 38409-H 16 1984-06	Determination of the phenol index
DIN EN ISO 17075-1 2017-05	Leather – Determination of chromium(VI) content in leather – Part 1: Colorimetric method
DIN EN ISO 17075-2 2017-05	Leather – Chemical determination of chromium(VI) content in leather – Part 2: Chromatography
ISO 10195 2018-05	Leather – Chemical determination of chromium(VI) content in leather – Thermal pre-ageing of leather and determination of hexavalent chromium
In-house method SOP M 3696 Expected release 2019-05	Halogenated organic compounds (AOX) in textiles
In-house method SOP M 3690 2020-12	Determination of extractable organically bonded halogens

In-house method SOP M 3700 2020-12	Determination of organic acids in air samples, water, aqueous extracts, cleaning agents and migrates BY ion chromatography and HPLC

9.2 Organic compounds

DIN EN 71-09 2007-09	Safety of toys – Part 9: Organic-chemical compounds – Requirements
DIN EN 71-10 2006-03	Safety of toys – Part 10: Organic chemical compounds – Sample preparation and extraction
DIN EN 71-11 2006-01	Safety of toys – Part 11: Organic-chemical compounds

9.2.1 By liquid chromatography with conventional detectors [DAD, FLD, UV/VIS] **

In-house method SOP M 167 2016-05	Determination of aldehydes (DNPH method)
ASU B 82.02-1 1985-06	Analysis of commodity goods; determination of the release of formaldehyde from textile commodity goods
DIN EN ISO 17226-1 2008-08	Leather – Chemical determination of formaldehyde content – Part 1: Method using high performance liquid chromatography
In-house method SOP M 3130 2016-01	Determination of free formaldehyde by HPLC and post-column derivatisation – Acetylacetone method
DIN EN 71-07 2014-07	Safety of toys – Part 7: Finger stains – Requirements and test methods using HPLC
DIN EN 1400-3 2002-12	Child use and care articles – Soothers for babies and young children - Part 3: Chemical requirements and tests
DIN EN 14350-2 2004-11	Child use and care articles - Drinking equipment – Part 2: Chemical requirements and tests using HPLC
In-house method SOP M 1811 2009-02	Determination of 2-mercaptobenzothiazole (MBT) and antioxidants by HPLC-DAD/FLD
In-house method SOP M 2544 2011-07	Determination of preservatives in various matrices by HPLC-DAD/FLD [for: Migrates]

BVL B 82.02-15 2013-01	Analysis of commodity goods – Methods for determination of certain aromatic amines in textiles derived from azo colourants– Part 3: Detection of the use of certain azo colourants, which may release 4-aminoazobenzene (adoption of standard of the same name DIN EN 14362 Part 3, September 2012 edition)
DIN EN ISO 14362-3 2017-05	Textiles – Methods for determination of certain aromatic amines derived from azo colourants – Part 3: Detection of the use of certain azo colourants, which may release 4-aminoazobenzene
BVL B 82.02-2 2013-01	Analysis of commodity goods - Methods for determination of certain aromatic amines in textiles derived from azo colourants – Part 1: Detection of the use of certain azo colourants accessible with and without extracting the fibres (adoption of standard of the same name DIN EN 14362 Part 1, April 2012 edition)
DIN EN ISO 14362-1 2017-05	Textiles – Methods for determination of certain aromatic amines derived from azo colourants – Part 1: Detection of the use of certain azo colourants accessible with and without extracting the fibres
BVL B 82.02-9 2014-02	Analysis of commodity goods – Determination of certain azo colourants in dyed leathers – Part 2: Determination of 4-aminoazobenzene (adoption of standard of the same name DIN EN ISO 17234-2, June 2011 edition)
DIN EN ISO 17234-2 2011-06	Leather – Chemical tests for the determination of certain azo colourants in dyed leathers – Part 2: Determination of 4-aminoazobenzene
BVL B 82.02-3 2016-07	Analysis of commodity goods – Determination of certain azo colourants in dyed leathers – Part 1: Determination of certain aromatic amines derived from azo colourants (adoption of standard of the same name DIN EN ISO 17234-1, July 2015 edition)
DIN EN ISO 17234-1 2014-07	Leather – Chemical tests for the determination of certain azo colourants in dyed leathers – Part 1: Determination of certain aromatic amines derived from azo colourants
In-house method SOP M 3244 2017-10	Determination of bisphenol A in migrates, mineral water and drinking water, air and in accordance with EN 71-9

In-house method SOP M 3722 2020-12	Determination of quinoline in textiles, shoes and chemical products by HPLC-DAD/MS

9.2.2 By liquid chromatography with mass selective detectors [MS, MS/MS] **

DIN EN 71-12 2017-03	Safety of toys – Part 12: N-nitrosamines and N-nitrosatable substances by LC-MS/MS
In-house method SOP M 1227 2019-09	Determination of PFCs by LC-MS/MS
ISO 23702-1 2018-09	Leather – Organic fluorine - Part 1: Determination of non-volatile compounds by an extraction method with liquid chromatography/tandem mass spectrometry detector (LC-MS/MS)
In-house method SOP M 1027 2015-10	Determination of alkyphenol ethoxylates by LC-MS in materials
DIN EN ISO 18254-1 2016-09	Textiles – Method for the detection and determination of alkylphenol ethoxylates (APEO) – Part 1: Method using HPLC-MS
ISO 21084 2019-02	Textiles – Method for the determination of alkylphenols (AP)
In-house method SOP M 3116 2014-02	Determination of alkyphenols by LC-MS in materials
DIN EN ISO 18218-1 2015-11	Leather – Determination of ethoxylated alkylphenols – Part 1: Direct method (ISO 18218-1:2015)
DIN EN ISO 18218-2 2018-05	Leather – Determination of ethoxylated alkylphenols – Part 2: Indirect method (ISO/DIS 18218-2:2018); German and English version prEN ISO 18218-2:2018 [draft]
DIN 54231 2005-11	Analysis of commodity goods – Detection of disperse dyestuffs in textiles by HPLC
BVL B 82.02-10 2007-03	Textiles – Detection of disperse dyestuffs Analysis of commodity goods – Detection of disperse dyestuffs in textiles (adoption of German standard of the same name DIN 54231, November 2005 edition)

In-house method SOP M 1029 2014-06	Determination of aromatic amines in migrates by LC-MS/MS
In-house method SOP M 3489 2019-02	Determination of bisphenol-A in plastics by LC-MS/MS
In-house method SOP M 3231 2018-03	Determination of lactams in aqueous solution by LC-MS/MS
In-house method SOP M 3450 2018-04	Determination of anthranilic acid amide in aqueous solution by LC-MS/MS
In-house method SOP M 3232 2016-05	Determination of 1,6-hexamethylenediamine in aqueous solution by LC-MS/MS
In-house method SOP M 2485 2011-07	Determination of polar organic residues (e.g. medicinal products, X-ray contrast media, sweeteners, preservatives, microcystins, anti-corrosion agents, etc.) in water by LC-MS/MS (in migrates)
In-house method SOP M 3722 2020-12	Determination of quinoline in textiles, shoes and chemical products by HPLC-DAD/MS

9.2.3 By gas chromatography with conventional detectors [TEA] **

EN 71-12 2017-03	Safety of toys – Part 12: N-nitrosamines and N-nitrosatable substances; German version EN 71-12:2016
DIN ISO 29941 2014-12	Condoms – Determination of nitrosamines migrating from natural rubber latex condoms
DIN EN 12868 2017-04	Methods for determining the release of N-nitrosamines and N-nitrosatable substances from elastomer or rubber teats and soothers using GC-TEA
ASU B 82.92-1 2018-04	Analysis of commodity goods – Child use and care articles – Methods for determining the release of N-nitrosamines and N-nitrosatable substances from elastomer or rubber teats and soothers
Bundesgesundheitsblatt (Federal Health Gazette) 53rd Communication 1994-05	Determination of the transfer of N-nitrosamines from commodities in food simulants

In-house method SOP M 1957 2014-08	Determination of N-nitrosamines from vulcanisates by GC-TEA
ASTM F1313-90 2011	Standard Specification for Volatile N-Nitrosamine Levels in Rubber Nipples on Pacifiers
In-house method SOP M 3242 2019-04	Quantitative determination of substances with SML limits in various migrates by extraction and GC-MS/FID analysis

9.2.4 By gas chromatography with mass selective detectors [MS, MS/MS] **

DIN EN 71-07 2014-07	Safety of toys – Part 7: Finger stains – Requirements and test methods using GC/MS
CPSC-CH-C1001-09.3 2011-12	Standard Operating Procedure for Determination of Phthalates and/or GB/T 22048-2008, Toys and Children's Products – Determination of Phthalate Plasticizers in Polyvinyl Chloride Plastic by GC-MS
In-house method SOP M 889 2018-11	Determination of plasticisers in complex matrices by GC-MS
DIN EN ISO 14389 2014-10	Textiles – Determination of phthalate content – Tetrahydrofuran method
In-house method SOP M 371 2014-11	Determination of plasticiser compounds in water and migrates
DIN EN 14372 2004-11	Child use and care articles – Cutlery and crockery – Safety requirements and tests
In-house method SOP M 123 2009-02	Qualitative and semi-quantitative identification of organic substances by GC-MS screening
In-house method SOP M 791 2020-05	Determination of PAH/PCB in different matrices by GC-MS/MS based on AfPS GS 2014-01
In-house method SOP M 888 2014-06	Determination of polybrominated diphenyl ethers and polybrominated biphenyls in various materials by GC-MS
In-house method SOP M 3441 2019-06	Determination of hexabromocyclododecane (HBCD) in material samples by GC-MS/MS

DIN EN ISO 17234-1 2014-07	Leather – Chemical tests for the determination of certain azo colourants in dyed leathers – Part 1: Determination of certain aromatic amines derived from azo colourants
BVL B 82.02-3 2016-07	Analysis of commodity goods – Determination of certain azo colourants in dyed leathers – Part 1: Determination of certain aromatic amines derived from azo colourants (adoption of standard of the same name DIN EN ISO 17234-1, July 2015 edition)
DIN EN ISO 17234-2 2011-06	Leather – Chemical tests for the determination of certain azo colourants in dyed leathers – Part 2: Determination of 4-aminoazobenzene
BVL B 82.02-9 2014-02	Analysis of commodity goods – Determination of certain azo colourants in dyed leathers – Part 2: Determination of 4-aminoazobenzene (adoption of standard of the same name DIN EN ISO 17234-2, June 2011 edition)
DIN EN ISO 14362-1 2017-05	Textiles – Methods for determination of certain aromatic amines derived from azo colourants – Part 1: Detection of the use of certain azo colourants accessible with and without extracting the fibres
BVL B 82.02-2 2013-01	Analysis of commodity goods - Methods for determination of certain aromatic amines in textiles derived from azo colourants – Part 1: Detection of the use of certain azo colourants accessible with and without extracting the fibres (adoption of standard of the same name DIN EN 14362 Part 1, April 2012 edition)
DIN EN ISO 14362-3 2017-05	Textiles – Methods for determination of certain aromatic amines derived from azo colourants – Part 3: Detection of the use of certain azo colourants, which may release 4-aminoazobenzene
BVL B 82.02-15 2013-01	Analysis of commodity goods – Methods for determination of certain aromatic amines in textiles derived from azo colourants– Part 3: Detection of the use of certain azo colourants, which may release 4-aminoazobenzene (adoption of standard of the same name DIN EN 14362 Part 3, September 2012 edition)
DIN EN ISO 17070 2015-05	Analysis of commodity goods – Detection and determination of pentachlorophenol in commodities, in particular leather and textiles (Modification: *Extraction with methanol, derivatisation with diazomethane*)

BVL B 82.02-19 2016-07	Analysis of commodity goods – Determination of the content of tetrachlorophenol, trichlorophenol, dichlorophenol, monochlorophenol isomers and pentachlorophenol in leather (in accordance with DIN EN ISO 17070)
In-house method SOP M 3125 05-2017	Determination of polychlorinated phenols and o-phenylphenol by GC-MS in commodities
BVL B 80.56-1 1991-05	Determination of polychlorinated biphenyls in paper and cardboard by GC-MS
DIN 54232 2010-08	Textiles – Determination of the content of bonds based on chlorobenzene and chlorotoluene
In-house method SOP M 3157 2019-10	Determination of bisphenol-A in water by SBSE/GC/MS [In migrates.]
DIN CEN ISO/TS 16181 2011-10	Footwear – Critical substances potentially present in footwear and footwear components – Determination of phthalates in footwear materials
In-house method SOP M 1713 2008-11	Gas chromatographic determination of polar organic substances in water and aqueous migrates
In-house method SOP M 3242 2019-04	Quantitative determination of substances with SML limits in various migrates by extraction and GCMS/FID analysis
In-house method SOP M 3131 2020-11	Determination of organotin compounds in textiles, leather and plastic materials based on DIN EN ISO 17353
In-house method SOP M 1139 2014-06	Determination of short chain chlorinated paraffin (SCCP) in textiles, leather and plastics by GC-MS (NCI)
In-house method 3706 2019-04	Determination of formamide and dimethylformamide after extraction with acetone and measurement by GC-MS
ISO/TS 16186 2012-08	Footware - critical subatances potentially present in footwaer and footwear components - Test method to quantitatively determine dimethyl furamate (DMFU) in footwear materials
DIN EN 17130 2018-04	Textile products – Critical substances that may be contained in components of textile products – Test method for the quantitative determination of dimethylfuramate (DMFu) in textile material products

9.2.5 By UV/VIS

DIN EN ISO 17226-2 2009-09	Leather – Chemical determination of formaldehyde content – Part 2: Method using colorimetric analysis
ASU B 82.02-1 1985-06	Analysis of commodity goods; determination of the release of formaldehyde from textile commodity goods
In-house method SOP M 459 2000-05	Determination of the protein concentration in aqueous media according to the Lowry method

9.2.6 Other tests

In-house method SOP M 0713 2020-12	Detection of peroxide residues in silicone elastomers
In-house method SOP M 0804 2005-02	Determination of peroxide oxygen on the surface of commodities
DIN EN 1400 2018-11	Child use and care articles – Soothers for babies and young children – Safety requirements and test methods (Restriction: *Chemical test methods only*)
ASU B 82.10-1 1985-06	Analysis of commodity goods – Testing of coloured children's toys with respect to their resistance to saliva and perspiration

9.3 Analysis of migration and overall migration in commodities

ASU B 80.00-4 2008-10	Analysis of commodity goods – Sensory testing – Testing of packaging materials and packages for foodstuffs

9.3.1 Analysis of overall migration from plastics using the contact method **

DIN EN 1186-2 2002-07	Materials and articles in contact with foodstuffs – Plastics – Part 2: Test methods for overall migration into olive oil by total immersion
DIN EN 1186-4 2002-07	Materials and articles in contact with foodstuffs – Plastics – Part 4: Test methods for overall migration in olive oil by cell

DIN EN 1186-8 2002-07	Materials and articles in contact with foodstuffs – Plastics – Part 8: Test methods for overall migration into olive oil by article filling
DIN EN 1186-13 2002-12	Materials and articles in contact with foodstuffs – Plastics – Part 13: Test methods for overall migration at high temperatures
ASU B 80.30-6 (EG) 2008-11	Analysis of commodity goods; plastics – Part 3: Test methods for overall migration in aqueous test foodstuffs by total immersion
ASU B 80.30-10 (EG) 2008-11	Analysis of commodity goods; plastics – Part 7: Test methods for overall migration in aqueous test foodstuffs using bags
ASU B 80.30-17 (EG) 2008-11	Analysis of commodity goods; plastics – Part 14: Test methods for “substitute test” for overall migration from plastics designed for contact with fatty foodstuffs using the test media iso-octane and 95% ethanol
In-house method SOP M 435 2017-02	Testing of commodities; determination of constituents after specific migration

9.3.2 Analysis of commodity goods in contact with foodstuffs

DIN EN 1541 2001-07	Paper and board intended to come into contact with foodstuffs – Determination of formaldehyde in an aqueous extract
DIN EN 14338 2004-03	Paper and board intended to come into contact with foodstuffs – Conditions for determination of migration from paper and board using modified polyphenylene oxide (MPPO) as a simulant
DIN 54603 2008-08	Testing of paper, paperboard and board – Determination of glyoxal content
Volume 2 / BII VIII[#] 1979-10	Testing of commodities made of plastics and other polymers for installation in beverage dispensing equipment
Volume 2 / IX[#] 1973-04	Testing of dyed commodities made of plastics and other polymers for colour fastness
Volume 2 / BII XV, 2.2.4/9[#] 2003-05	Determination of volatile fractions in silicone elastomers

Volume 2 / BII XV, 2.2.4/14# 2003-05	Determination of the extractable fractions in commodities made of silicone resins and silicone elastomers
Volume 2 / BII XXI, 2.5.2.2.3# 1998-10	Quantitative photometric determination of N-ethylphenylamine in aqueous extracts of commodities made of rubber
Volume 2 / BII XXI, 2.5.2.2.4# 1998-10	Determination of primary amines in aqueous food simulants
Volume 2 / BII XXI, 2.5.2.2.5# 1998-10	Testing for secondary aliphatic and cyclophatic amines in commodities made of rubber

9.3.2.1 By visual inspection *

DIN EN 646 2019-02	Paper and board intended to come into contact with foodstuffs – Determination of colour fastness of dyed paper and board
DIN EN 648 2019-02	Paper and board intended to come into contact with foodstuffs – Determination of the fastness of fluorescent whitened paper and board

9.4 Microbiological analysis *

9.4.1 Cultural methods (spatula plate, pour plate, surface plating, MPN and detection methods)

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 6888-1 2019-06	Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of coagulase-positive staphylococci (Staphylococcus aureus and other species) in foodstuffs – Part 1: Technique using Baird-Parker agar medium
ISO 15213 2003-05	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of sulfite-reducing bacteria growing under anaerobic conditions
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 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
DIN ISO 21528-2 2019-05	Microbiology of food and animal feeding stuffs – Horizontal methods for the detection and enumeration of Enterobacteriaceae – Part 2: Colony-count method
In-house method SOP M 3736 2020-02	**Microbiological analysis of commodity goods and packaging materials**
DIN EN ISO 20743 2013-12 DIN EN ISO 20645 2005-02	Textiles – Determination of the antibacterial efficacy of textile products Textile fabrics – Determination of the antibacterial activity – Agar diffusion plate test
JIS L 1902 2015-07	Testing for antibacterial activity and efficacy on textile products
DIN EN 1104 2019-01	Paper and board intended to come into contact with foodstuffs – Determination of the transfer of antimicrobial constituents
ISO 22196 2011-08	Measurement of antibacterial activity on plastics and other non-porous surfaces

9.4.2 Biochemical methods for the identification of microorganisms

In-house method SOP M 204 2020-02	Orienting identification for determination of bacterial genus by Gram staining
In-house method SOP M 205 2017-07	Identification of microorganisms for determination of species
In-house method SOP G 478 2020-11	Standard operating procedure for the Vitek 2 Compact 60 device with Vitek software V9.02 and Vitek 2 compact identification cards

9.4.3 Mass spectrometric analysis for the identification of microorganisms

In-house method SOP M 3435 2020-12	Identification of microorganisms with the MALDI Biotyper System with software MBT Compass HT V5.0.0

9.4.4 Molecular biological analysis for the identification of bacteria, yeasts and moulds by conventional PCR

In-house method SOP M 1335 2020-10	Identification of microorganisms with the MicroSeq ID System with MicroSeq ID Analysis Software V2.0/ Sequencing Analysis Software V5.3/ Genetic Analyzer Data Collection Software V 5.2 (Kits: MicroSeq 500 16s-rDNA Sequencing Kit / MicroSeq D2 LSU rDNA Fungal Sequencing Kit)

9.5 Bioanalytical methods

DIN EN ISO 14855-1 2013-04	Determination of the ultimate aerobic biodegradability and disintegration of plastic materials under controlled composting conditions – Method by analysis of evolved carbon dioxide

9.6 Performance tests

RAL-UZ 84a Annex to Basic Award Criteria 2013-02	Test method for fitness for purpose of sanitary additives with regard to odour reduction in mobile toilet additives
In-house method SOP M 1102 2015-03	Determining the Dunk Capacity of Feminine Care Products
In-house method SOP M 1103 2015-03	Determination of fluid amount by an absorbent structure of Feminine Care Products (Gush Run-Off Test)
In-house method SOP M 1104 2015-03	Fluid Acquisition Method of Feminine Care Products
In-house method SOP M 1106 2015-03	Rewet Behaviour of Feminine Care Products
In-house method SOP M 2372 2018-10	IKW Cleaning Performance of Dishwasher Detergents: Determination of the removal of dirt by cleaning in the machine with dishwasher detergent by visual and gravimetric testing

9.7 Physical testing of textiles

9.7.1 Colour fastness tests

DIN EN ISO 105-B02 2014-11	Textiles - Tests for colour fastness - Part B02: Colour fastness to artificial light: Xenon arc fading lamp test
DIN EN ISO 105-C06 2010-08	Textiles – Tests for colour fastness – Part C06: Colour fastness to domestic and commercial laundering
DIN EN ISO 105-C08 2010-08	Textiles – Tests for colour fastness – Part C08: Colour fastness to domestic and commercial laundering using a non-phosphate reference detergent incorporating a low temperature bleach activator
DIN EN ISO 105-C09 2007-10	Textiles - Tests for colour fastness - Part C09: Oxidative bleach response using a non-phosphate reference detergent incorporating a low temperature bleach activator
DIN EN ISO 105-D01 2010-10	Textiles - Tests for colour fastness - Part D01: Colour fastness to dry cleaning using perchloroethylene solvent
DIN EN ISO 105-D02 2016-12	Textiles - Tests for colour fastness - Part D02: Colour fastness to rubbing: Organic solvents
DIN EN ISO 105-E01 2013-06	Textiles - Tests for colour fastness - Part E01: Colour fastness to water
DIN EN ISO 105-E02 2013-06	Textiles - Tests for colour fastness - Part E02: Colour fastness to seawater
DIN EN ISO 105-E03 2010-08	Textiles - Tests for colour fastness - Part E03: Colour fastness to chlorinated water (swimming-pool water)
DIN EN ISO 105-E04 2013-08	Textiles - Tests for colour fastness - Part E04: Colour fastness to perspiration
DIN EN ISO 105-E07 2010-08	Textiles - Tests for colour fastness - Part E07: Colour fastness to spotting: Water
DIN EN ISO 105-X05 1997-05	Textiles - Tests for colour fastness - Part X05: Colour fastness to organic solvents
DIN EN ISO 105-X12 2002-12	Textiles - Tests for colour fastness - Part X12: Colour fastness to rubbing

DIN EN ISO 105-X18 2007-12	Textiles - Tests for colour fastness - Part X18: Assessment of the potential to phenolic yellowing of materials
DIN 53160-1 2010-10	Determination of the colour fastness of articles for common use – Part 1: Resistance to artificial sweat
DIN 53160-2 2010-10	Determination of the colour fastness of articles for common use – Part 2: Test with artificial sweat

9.7.2 Mechanical-technological analysis of fabrics

DIN EN ISO 12945-1 2001-08	Textiles – Determination of fabric propensity to surface fuzzing and to pilling – Part 1: Pilling box method
DIN EN ISO 12945-2 2000-11	Textiles – Determination of fabric propensity to surface fuzzing and to pilling – Part 2: Modified Martindale method
DIN EN ISO 12947-1 2007-04	Textiles – Determination of the abrasion resistance of fabrics by the Martindale method – Part 1: Martindale abrasion testing apparatus
DIN EN ISO 12947-2 2017-03	Textiles – Determination of the abrasion resistance of fabrics by the Martindale method – Part 2: Determination of specimen breakdown
DIN EN ISO 13934-1 2013-08	Textiles - Tensile properties of fabrics - Part 1: Determination of maximum force and elongation at maximum force using the strip method
DIN EN ISO 13934-2 2014-06	Textiles - Tensile properties of fabrics - Part 2: Determination of maximum force using the grab method
DIN EN ISO 13935-1 2014-07	Textiles – Seam tensile properties of fabrics and made-up textile articles – Part 1: Determination of maximum force to seam rupture using the strip method
DIN EN ISO 13935-2 2014-07	Textiles – Seam tensile properties of fabrics and made-up textile articles – Part 2: Determination of maximum force to seam rupture using the grab method
DIN EN ISO 13937-1 2000-06	Textiles - Tear properties of fabrics - Part 1: Determination of tear force using ballistic pendulum method (Elmendorf)

DIN EN ISO 13937-2 2000-06	Textiles - Tear properties of fabrics - Part 2: Determination of tear force of trouser-shaped test specimens (single tear method)
DIN EN ISO 13937-3 2000-06	Textiles - Tear properties of fabrics - Part 3: Determination of tear force of wing-shaped test specimens (Single tear method)
DIN EN ISO 13937-4 2000-06	Textiles - Tear properties of fabrics - Part 4: Determination of tear force of tongue-shaped test specimens (Double tear test)
DIN EN 12127 1997-12	Textiles - Fabrics - Determination of mass per unit area using small samples
DIN EN 14704-1 2005-07	Determination of the elasticity of fabrics - Part 1: Strip tests
DIN EN 13936-1 2004-07	Textiles – Determination of the slippage resistance of yarns at a seam in woven fabrics – Part 1: Fixed seam opening method
DIN EN ISO 13936-2 2004-07	Textiles – Determination of the slippage resistance of yarns at a seam in woven fabrics – Part 2: Fixed load method
DIN EN ISO 13938-2 1999-10	Textiles – Bursting properties of fabrics – Part 2: Pneumatic method for determination of bursting strength and bursting distension

9.7.3 Other textile tests

ISO 16322-1 2005-06	Textiles – Determination of spirality after laundering – Part 1: Percentage of wale spirality change in knitted garments
ISO 16322-3 2005-06	Textiles – Determination of spirality after laundering – Part 3: Woven and knitted garments
DIN EN ISO 5077 2008-04	Textiles – Determination of dimensional change in washing and drying
DIN EN ISO 6330 2013-02	Textiles – Domestic washing and drying procedures for textile testing
DIN EN ISO 24920 2012-12	Textiles; determination of resistance to surface wetting (spray test)
DIN EN 14971 2006-04	Textiles - Knitted fabrics - Determination of number of stitches per unit length and unit area

DIN 53830-3 1981-05	Testing of textiles; determination of linear density of single and plied yarns; simple yarns and plied yarns, textured yarns, short length method
In-house method SOP M 2045 2014-11	Analysis of textiles – Determination of appearance after washing and drying
In-house method SOP M 2059 2010-09	Testing of textiles – Qualitative fibre analysis
In-house method SOP M 2060 2010-09	Testing of textiles – Quantitative fibre analysis

10 Determination of the water content of mineral oil hydrocarbons and solvents by Karl Fischer titration *

DIN 51777-1 1974-09	Testing of mineral oil hydrocarbons and solvents; determination of water content according to Karl Fischer; direct method
DIN 51777-2 1974-09	Testing of mineral oil hydrocarbons and solvents; determination of water content according to Karl Fischer; indirect method

11 Efficacy testing of disinfectants **

DIN EN 1040 2006-03	Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of basic bactericidal activity of chemical disinfectants and antiseptics – Test method and requirements *(No conformity assessment of medical devices)*
DIN EN 1275 2006-03	Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of basic fungicidal or basic yeasticidal activity of chemical disinfectants and antiseptics – Test method and requirements (phase 1) *(No conformity assessment of medical devices)*
DIN EN 1276 2019-11	Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas – Test method and requirements (phase 2, step 1) *(No conformity assessment of medical devices)*

DIN EN 1499 2017-10	Chemical disinfectants and antiseptics – Hygienic handwash – Test method and requirements (phase 2/step 2)
DIN EN 1500 2017-10	Chemical disinfectants and antiseptics – Hygienic handrub – Test method and requirements (phase 2/step 2)
DIN EN 1650 2019-10	Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas – Test method and requirements (phase 2, step 1) *(No conformity assessment of medical devices)*
DIN EN 1656 2019-12	Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants and antiseptics used in the veterinary area – Test method and requirements (phase 2, step 1)
DIN EN 1657 2016-11	Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants and antiseptics used in the veterinary area – Test method and requirements (phase 2, step 1)
DIN EN 12791 2018-01	Chemical disinfectants and antiseptics – Surgical hand disinfection – Test method and requirement (phase 2/step 2)
DIN EN 13623 2010-12	Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of bactericidal activity against Legionella of chemical disinfectants for aqueous systems - Test method and requirements (phase 2, step 1); German version EN 13623:2010 *(No conformity assessment of medical devices)*
DIN EN 13624 2013-12	Quantitative suspension test for the evaluation of fungicidal or yeasticidal activity in the medical area – Test method and requirements (phase 2, step 1) *(No conformity assessment of medical devices)*
DIN EN 13697 2015-06	Quantitative non-porous surface test for the evaluation of bactericidal and/or fungicidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas (phase 1, step 1) *(No conformity assessment of medical devices)*

DIN EN 13704 2018-09	Chemical disinfectants – Quantitative suspension test for the evaluation of sporicidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas – Test method and requirements (phase 2, step 1) *(No conformity assessment of medical devices)*
DIN EN 13727 2015-12	Quantitative suspension test for the evaluation of bactericidal activity in the medical area (phase 1, step 1) *(No conformity assessment of medical devices)*
DIN EN 14348 2005-04	Chemical disinfectants and antiseptics – Quantitative suspension test for the evaluation of mycobactericidal activity of chemical disinfectants in the medical area *including instrument disinfectants – Test methods and requirements (phase 2, step 2)* *(No conformity assessment of medical devices)*
DIN EN 14349 2013-02	Chemical disinfectants and antiseptics – Quantitative surface test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in the veterinary area on non-porous surfaces without mechanical action – Test method and requirements (phase 2, step 2)
DIN EN 14561 2006-08	Chemical disinfectants and antiseptics – Quantitative carrier test for the evaluation of bactericidal activity for instruments used in the medical area – Test method and requirements (phase 2, step 2) *(No conformity assessment of medical devices)*
DIN EN 14562 2006-08	Chemical disinfectants and antiseptics – Quantitative carrier test for the evaluation of fungicidal or yeasticidal activity for instruments used in the medical area – Test method and requirements (phase 2, step 2) *(No conformity assessment of medical devices)*
DIN EN 14563 2009-02	Chemical disinfectants and antiseptics – Quantitative carrier test for the evaluation of bactericidal activity for instruments used in the medical area – Test method and requirements (phase 2, step 2) *(No conformity assessment of medical devices)*
DIN EN 16438 2014-07	Chemical disinfectants and antiseptics – Quantitative surface test for the evaluation of fungicidal or yeasticidal activity of chemical disinfectants and antiseptics used in the veterinary area on non-porous surfaces without mechanical action – Test method and requirements (phase 2, step 2)

DIN EN 16615 2015-06	Chemical disinfectants and antiseptics – Quantitative test method for the evaluation of bactericidal and yeasticidal activity on non-porous surfaces with mechanical action employing wipes in the medical area (4-field test) – Test method and requirements (phase 2, step 2) *(No conformity assessment of medical devices)*
ASTM E 2180 2007	Standard Test Method for determination the activity of incorporated antimicrobial agents in polymeric or hydrophobic materials
JIS Z 2801 2000	Antimicrobial products - Test for antimicrobial activity and efficacy
VAH – Method 7 2015-04	Determination of bacteriostatic and levurostatic effectiveness and appropriate neutralising agents
VAH – Method 8 2015-04	Determination of bactericidal and yeasticidal effectiveness in a qualitative suspension test
VAH – Method 9 2015-04	Determination of bactericidal, yeasticidal, fungicidal, tuberculocidal and mycobactericidal activity in a quantitative suspension test
VAH – Method 10 2015-04	Hygienic hand washing Practical test with test persons
VAH – Method 11 2015-04	Hygienic hand disinfection Practical test with test persons
VAH – Method 12 2015-04	Surgical hand disinfection Practical test with test persons
VAH – Method 14.1 2015-04	Surface disinfection without mechanical action – Practical test
VAH – Method 14.2 2015-04	Surface disinfection with mechanical action – Practical 4-field test
VAH – Method 15 2015-04	Chemical/chemothermal instrument disinfection – Practical quantitative carrier test
In-house method SOP M 0779 2017-10	Prüfung chemischer Desinfektionsmittel

In-house method SOP M 3740 2020-02	Testing of laundry disinfection methods
In-house method SOP M 3663 2020-12	Determination of extractable organically bonded halogens (F, Cl, Br, I)

12 Testing of cosmetics, pharmaceuticals, raw materials and preparations

12.1 Sample preparation

In-house method SOP M 1215 2007-09	Microwave digestion of solid samples (e.g. cosmetics, plastics, paints, wood) for the determination of heavy metals by ICP-MS, ICP-OES or AAS

12.2 Inorganic parameters

12.2.1 Anions

In-house method SOP M 3679 2020-12	Determination of total fluorine and water-soluble fluoride in cosmetic products
In-house method SOP M 3663 2020-12	Determination of extractable organically bonded halogens (F, Cl, Br, I)

12.2.2 Determination of elements by ICP-OES **

DIN EN ISO 11885 (E 22) 2009-09	Determination of selected elements by inductively coupled plasma optical emission spectrometry (ICP-OES) (Modification: *Determination in microwave digestions, matrix adjustment*)
In-house method SOP M 3765 2019-11	Determination of silicone oil in cosmetic products by ICP-OES

12.2.3 Determination of elements by ICP-MS **

DIN EN ISO 17294-2 (E 29) 2017-01	Water quality – Application of inductively coupled plasma mass spectrometry (ICP-MS) – Part 2: Determination of selected elements including uranium isotopes (Modification: *Determination in microwave digestions, matrix adjustment*)

12.2.4 By AAS [GF-AAS, hydride AAS] *

BVL L 00.00-19/3 2004-07	Determination of trace elements in foodstuffs; Part 3: Determination of lead, cadmium, chromium and molybdenum by graphite furnace atomic absorption spectrometry (AAS)
ISO 17378-2:2014-02 2014-02	Water quality –Determination of arsenic and antimony – Part 2: Method using hydride generation atomic absorption spectrometry (HG-AAS) (Modification: *Determination in microwave and special digestions*)

12.2.5 By photometry

In-house method SOP M 572 2006-03	Determination of titanium and bismuth in suppository masses and ointments
In-house method SOP M 1172 2018-04	Determination of chromium(VI) by ion chromatography with post-column derivatisation

12.2.6 By IC

In-house method SOP M 3700 2020-12	Determination of organic acids in air samples, water, aqueous extracts, cleaning agents and migrates BY ion chromatography and HPLC

12.2.7 Other

DIN EN ISO 12185 1997-11	Crude petroleum and petroleum products – Determination of density – Oscillating U-tube method

12.3 Organic parameters

12.3.1 By gas chromatography with conventional detectors (TEA, FID) **

In-house method SOP M 940 2017-03	Determination of N-nitrosodiethanolamine in pharmaceutical and cosmetic products by GC/TEA
In-house method SOP M 207 2019-05	Determination of highly volatile N-nitrosamines by steam vacuum distillation

In-house method SOP M 3613 2019-04	Determination of ethanol, i-propanol, n-propanol with a content > 0.25% in cosmetic products and WPR products

12.3.2 By gas chromatography with mass selective detectors [MS, MS/MS] **

In-house method SOP M 3486 2019-06	Determination of 4-aminoazobenzene by GC-MS and UPLC-DAD
In-house method SOP M 2545 2018-08	Determination of allergenic fragrances, plasticisers, musk and nitro musk compounds in various matrices by GC-MS
In-house method SOP M 3707 2019-04	Quantitative determination of 1,4 dioxane in cosmetics and detergent products by HS-GC-MS analysis
In-house method SOP M 791 2019-10	Determination of PAH/PCB in different matrices by GC-MS/MS based on AfPS GS 2014-01
In-house method SOP M 3498 2019-11	Determination of selected aromatic amines from azo dyes by GC-MS and UPLC-DAD
In-house method SOP M 889 2015-01	Determination of plasticiser compounds in complex matrices

12.3.3 By liquid chromatography with conventional detectors (DAD, FLD) **

In-house method SOP M 3498 2019-11	Determination of selected aromatic amines from azo dyes by GC-MS and UPLC-DAD
In-house method SOP M 2544 2011-07	Determination of preservatives in various matrices by HPLC-DAD/FLD
In-house method SOP M 3486 2019-06	Determination of 4-aminoazobenzene by GC-MS and UPLC-DAD

12.3.4 By liquid chromatography with mass selective detectors

In-house method SOP M 1027 2015-10	Determination of alkylphenol ethoxylates by LC-MS in materials (extraction with THF or methanol)

12.3.5 By photometry **

ASU K 84.00-7 (EC) 1991-09	Analysis of cosmetic products – Detection and quantification of free formaldehyde
In-house method SOP M 2484 2011-07	Photometric determination of formaldehyde
In-house method SOP M 3663 2020-12	Determination of extractable organically bonded halogens (F, Cl, Br, I)

12.4 Microbiological analysis **

12.4.1 Cultural methods (spatula plate, pour plate, surface plating, MPN and detection methods)

DIN EN ISO 11930 2019-04	Cosmetics – Microbiology – Evaluation of the antimicrobial protection of a cosmetic product
DIN EN ISO 16212 2017-09	Cosmetics – Microbiology –Enumeration of yeast and mould
DIN EN ISO 17516 2015-02	Cosmetic products – Microbiology – Microbiological limits
DIN EN ISO 18415 2017-09	Cosmetics - Microbiology - Detection of specified and non-specified microorganisms
DIN EN ISO 18416 2018-01	Cosmetics – Microbiology – Detection of Candida albicans
DIN EN ISO 21148 2017-09	Cosmetics – Microbiology – General instructions for microbiological examination
DIN EN ISO 21149 2017-11	Cosmetics – Microbiology –Enumeration and detection of aerobic mesophilic bacteria
DIN EN ISO 21150 2016-05	Cosmetics – Microbiology – Detection of *Escherichia coli*

DIN EN ISO 22717 2016-05	Cosmetics – Microbiology – Detection of *Pseudomonas aeruginosa*
DIN EN ISO 22718 2016-05	Cosmetics – Microbiology – Detection of *Staphylococcus aureus*
DIN EN ISO 29621 2017-07	Cosmetics – Microbiology – Guidelines for the risk assessment and identification of microbiologically low-risk products
Ph. Eur. Edition 10, 2020	Monograph 04/2018:0008: Purified water
Ph. Eur. Edition 10, 2020	Monograph 04/2017:0169: Water for injection purposes
Ph. Eur. 2.6.1 Edition 10, 2020 USP<71> Edition 43, 2020 JP (4.06), Edition 17, 2016 DIN EN ISO 11737-2 2009-09	Testing for sterility including verification of suitability
Ph. Eur. 2.6.7 Edition 10, 2019 USP<63> Edition 43, 2020	Testing for mycoplasma including verification of suitability
Ph. Eur. 2.6.12 Edition 10, 2020 USP <61>, Edition 43, 2020 JP 4.05 I, Edition 17, 2016 DIN EN ISO 11737-1 2009-09	Microbiological testing of non-sterile products; Enumeration of total viable microorganisms including verification of suitability
Ph. Eur. 2.6.13 Edition 10, 2020 USP <62> Edition 43, 2020 JP 4.05 II Edition 17, 2016	Microbiological testing of non-sterile products; Detection of specified microorganisms including verification of suitability

Ph. Eur. 2.6.31 Edition 10, 2020	Microbiological testing of medicinal plant products for oral use
Ph. Eur. 5.1.3 Edition 10, 2020 USP <51> Edition 43, 2020	Testing for adequate preservation
In-house method SOP M 0463 2011-12	Microbiological analysis of cosmetics

12.4.2 Biochemical methods for the identification of microorganisms

In-house method SOP M 204 2020-02	Orienting identification for determination of bacterial genus by Gram staining
In-house method SOP M 205 2017-07	Identification of microorganisms for determination of species using Vitek 2
In-house method SOP G 478 2020-11	Standard operating procedure for the Vitek 2 Compact 60 device with Vitek Software V9.02 and Vitek 2 compact identification cards

12.4.3 Mass spectrometric methods for the identification of microorganisms

In-house method SOP M 3435 2020-12	Identification of microorganisms with the MALDI Biotyper System with software MBT Compass HT V5.0.0

12.4.4 Molecular biological methods for the identification of bacteria, yeasts and moulds by conventional PCR

In-house method SOP M 1335 2020-10	Identification of microorganisms with the MicroSeq ID System with MicroSeq ID Analysis Software V2.0/ Sequencing Analysis Software V5.3/ Genetic Analyzer Data Collection Software V 5.2 (Kits: MicroSeq 500 16s-rDNA Sequencing Kit / MicroSeq D2 LSU rDNA Fungal Sequencing Kit)

12.4.5 Photometric methods for the detection of bacterial endotoxins

Ph. Eur. 2.6.14, Method B Edition 9, 2017 USP <85>	Testing for bacterial endotoxins using the gel-clot test

Edition 43, 2020	
Ph. Eur. 2.6.14, Method C/D Edition 10, 2020 USP <85> Edition 43, 2020	Testing for bacterial endotoxins using kinetic methods

12.4.6 Microscopic examination for particles

Ph. Eur. 2.9.19, Method 2 Edition 10, 2020 USP <788> Edition 43, 2020 JP 6.07 Edition 17, 2016	Microscopic determination of the particle content of parenterals

12.5 Bioanalytical parameters for degradability, in vitro toxicology and ecotoxicology

12.5.1 Biodegradation

DIN ISO 11266 1997-05	Soil quality – Guidance on laboratory testing for biodegradation of organic chemicals in soil under aerobic conditions
DIN EN ISO 9888 1999-11	Water quality – Evaluation of ultimate aerobic biodegradability of organic compounds in aqueous medium – Static test (Zahn-Wellens method)
DIN EN ISO 11734 1998-11 OECD 311 2006-03	Water quality – Determination of the “ultimate” anaerobic biodegradability of organic compounds in digested sludge – Method by measurement of the biogas production
DIN EN ISO 14045 2012-10	Packaging – Evaluation of the disintegration of packaging materials in practical oriented tests under defined composting conditions
ASTM D 5511 2012	Standard Test Method for Determining Anaerobic Biodegradation of Plastic Materials Under High-Solids Anaerobic-Digestion Conditions
OECD Guideline 301 A 1992-07	Degradation and Accumulation; Ready Biodegradability; DOC Die-Away Test
OECD Guideline 301 B	Degradation and Accumulation; Ready Biodegradability;

1992-07	Modified Sturm Test
OECD Guideline 301 D 1992-07	Degradation and Accumulation; Ready Biodegradability; Closed Bottle Test
OECD Guideline 301 E 1992-07	Degradation and Accumulation; Ready Biodegradability; Modified OECD Screening Test
OECD Guideline 301 F 1992-07	Degradation and Accumulation; Ready Biodegradability; Manimetric Respirometry Test
OECD Guideline 302 B 1992-07	Degradation and Accumulation; Inherent Biodegradability; Modified Zahn-Wellens-Test
OECD Guideline 302 C 2009-09	Degradation and Accumulation; Inherent Biodegradability; Modified MITI (II) Test

12.5.2 In vitro toxicity tests

OECD Guideline 431 2013-10 Draft revised	In vitro skin corrosion: reconstructed human epidermis (RHE) test method

12.5.3 Ecotoxicology

DIN EN ISO 9509 2006-10	Method for determination of nitrification inhibition of microorganisms in activated sludge by substances and waste water
DIN EN ISO 11348-2 (L 34) 2009-05	Determination of the inhibitory effect of water samples on the light emission of *Vibrio fischeri* (Luminescent bacteria test) – Part 2: Method using liquid-dried bacteria
OECD Guideline 201 2006-03	Effects on Biotic Systems; Alga, Growth Inhibition Test
OECD Guideline 202 2004-04	Effects on Biotic Systems; Daphnia spec., Acute Immobilisation Test
OECD Guideline 209 2010-07	Effects on Biotic Systems; Activated Sludge, Respiration Inhibition Test

13 List of test methods for the specialist module for WATER

Revised: LAWA of 18.10.2018

Section 1: Sampling and general parameters

Parameter	Method	Was	Sur	Raw
Sampling of waste water	**DIN 38402-A 11: 2009-02**	☒		
Sampling from running waters	DIN EN ISO 5667-6: 2016-12 (A 15		☒	
Sampling from aquifers	DIN 38402-A 13: 1985-12			☒
Sampling from barrages and lakes	DIN 38402-A 12: 1985-06		☒	
Homogenisation of samples	**DIN 38402-A 30: 1998-07**	☒	☒	
Temperature	DIN 38404-C 4: 1976-12	☒	☒	☒
pH value	**DIN EN ISO 10523: 2012-04 (C 5)**	☒	☒	☒
Conductivity (25 °C)	DIN EN 27888: 1993-11 (C 8)	☒	☒	☒
Odour	DIN EN 1622: 2006-10 (B 3) Annex C	☒	☒	☒
Colouring	DIN EN ISO 7887: 2012-04 (C 1), Method A	☒	☒	☒
Turbidity	DIN EN ISO 7027: 2000-04 (C 2)	☒	☒	☒
Oxygen	DIN EN ISO 5814: 2013-03 (G 22)		☒	☒
	DIN ISO 17289: 2014-12 (G 25)		☒	☒
	DIN EN 25813: 1993-01 (G 21)		☐	☐
Redox potential	**DIN 38404-C 6: 1984-05**	☒		☒

Section 2: Photometry, ion chromatography, titrimetry

Parameter	Method	Was	Sur	Raw
Absorption at 254 nm (SAC 254)	DIN 38404-C 3: 2005-07		☒	☒
Absorption at 436 nm (SAC 436)	DIN EN ISO 7887: 2012-04 (C 1), Method B	☒	☒	☒
Ammonium nitrogen	**DIN EN ISO 11732: 2005-05 (E 23)**	☒	☒	☒
	DIN 38406-E 5: 1983-10	☐	☐	☐
	DIN EN ISO 14911: 1999-12 (E 34)		☐	☐
	DIN ISO 15923-1: 2014-07 (D 49)	☐	☐	☐
Nitrite nitrogen	**DIN EN 26777: 1993-04 (D 10)**	☐	☒	☒

Parameter	Method	Was	Sur	Raw
	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)	☐	☐	☐
Phosphorus, total *(see also section 3)*	**DIN EN ISO 6878: 2004-09 (D 11)**	☒	☒	☒
	DIN EN ISO 15681-1: 2005-05 (D 45)	☐	☐	☐
	DIN EN ISO 15681-2: 2005-05 (D 46)	☐	☐	☐
Orthophosphate	DIN EN ISO 10304-1: 2009-07 (D 20)		☐	☐
	DIN EN ISO 6878: 2004-09 (D 11)		☒	☒
	DIN EN ISO 15681-1: 2004-07 (D 45)		☐	☐
	DIN EN ISO 15681-2: 2005-05 (D 46)		☐	☐
	DIN ISO 15923-1: 2014-07 (D 49)		☐	☐
Fluoride (dissolved)	**DIN 38405-D 4-1, 1985-07**	☒	☒	☒
	DIN EN ISO 10304-1: 2009-07 (D 20)	☒	☒	☒
Chloride	**DIN EN ISO 10304-1: 2009-07 (D 20)**	☒	☒	☒
	DIN EN ISO 15682: 2002-01 (D 31)	☐	☐	☐
	DIN ISO 15923-1: 2014-07 (D 49)	☐	☐	☐
	DIN EN ISO 10304-4: 1999-07 (D 25)			☐
	DIN 38405-D 1-1 and D 1-2: 1985-12	☐	☐	☐
	DIN 38405-D 1-3 and D 1-4: 1985-12		☐	☐
Sulphate	**DIN EN ISO 10304-1: 2009-07 (D 20)**	☒	☒	☒
	DIN 38405-D 5-1: 1985-01		☐	☐
	DIN 38405 D 5-2:1985-01	☐	☐	☐
	DIN ISO 15923-1: 2014-07 (D 49)	☐	☐	☐
Cyanide (readily liberated)	**DIN 38405-D 13-2: 1981-02**	☐	☐	☐

Parameter	Method	Was	Sur	Raw
	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 (readily liberated)	**DIN 38405-D 27: 1992-07**	☒	☒	☒

Section 3: Elemental analysis

Parameter	Method	Was	Sur	Raw
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)	☐	☐	☐

Parameter	Method	Was	Sur	Raw
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)	☐	☐	☐
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 (E 29)	☐	☐	☐
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)	☐	☐	☐

Parameter	Method	Was	Sur	Raw
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 ISO17852: 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)	☐	☐	☐
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)		☐	☐
Phosphorus, total *(see also section 2)*	**DIN EN ISO 11885: 2009-09 (E 22)**	☒	☒	☒
	DIN EN ISO 17294-2: 2017-01 (E 29)	☐	☐	☐

Section 4/5: Group and sum parameters

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

Section 6: Gas chromatographic methods

Parameter	Method	Was	Sur	Raw
Volatile halogenated hydrocarbons (VOC)	**DIN EN ISO 10301: 1997-08 (F 4)***	☐	☐	☐
	DIN 38407-F 43: 2014-10	☐	☐	☐
	DIN EN ISO 15680: 2004-04 (F 19)	☐	☐	☐
	DIN EN ISO 17943: 2016-11 (F 41)		☐	☐
Benzene and derivatives (BTEX)	**DIN 38407-F 9: 1991-05***	☐	☐	☐
	DIN 38407-F 43: 2014-10	☐	☐	☐
	DIN EN ISO 15680: 2004-04 (F 19)	☐	☐	☐
	DIN EN ISO 17943: 2016-11 (F 41)		☐	☐

Parameter	Method	Was	Sur	Raw
Organochlorine insecticides (OCP)	DIN EN ISO 6468: 1997-02 (F 1)*		☐	☐
	DIN 38407-F 37: 2013-11		☐	☐
	DIN EN 16693: 2015-12 (F 51)		☐	☐
Polychlorinated biphenyls (PCB)	DIN EN ISO 6468: 1997-02 (F 1)*		☐	☐
	DIN 38407-F 3: 1998-07		☐	☐
	DIN 38407-F 37: 2013-11		☐	☐
Mono, dichlorobenzenes	DIN EN ISO 15680: 2004-04 (F 19)		☐	☐
	DIN 38407-F 43: 2014-10		☐	☐
Tri to hexachlorobenzene	**DIN EN ISO 6468: 1997-02 (F 1)***	☐	☐	☐
	DIN 38407-F 2: 1993-02	☐	☐	☐
	DIN EN ISO 15680 (F19):2004-04**	☐	☐	☐
	DIN 38407-F 43: 2014-10**	☐	☐	☐
	DIN 38407-F 37: 2013-11	☐	☐	☐
	DIN EN 16693: 2015-12 (F 51)***		☐	☐
Chlorophenols	DIN EN 12673: 1999-05 (F 15)		☐	☐
Organophosphorus and organic nitrogen compounds	DIN EN ISO 10695: 2000-11 (F 6) *		☒	☒
Polycyclic aromatic hydrocarbons (PAHs)**	**DIN 38407-F 39: 2011-09**	☐	☐	☐
	DIN ISO 28540: 2014-05 (F 40)	☐	☐	☐
	DIN EN 16691: 2015-12 (F 50)		☐	☐
Hydrocarbon index	**DIN EN ISO 9377-2: 2001-07 (H 53)**	☐	☐	☐

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

Section 7: HPLC methods

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

* Mass spectrometric detection allowed

Section 8: Microbiological methods (not used)

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

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

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

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

14 List of test methods for the specialist module for WASTE 2018-05

Revised: LAGA, May 2018

Test area 1: Sewage sludge

	Sections / Parameters	**Basis /** Methods	
		AbfKlärV	
1.1	**Sampling and sample preparation**	**Section 32 (3) and (4) AbfKlärV**	
a)	**Sampling**	**DIN EN ISO 5667-13 (08.11) and DIN 19698-1 (05.14)**	☒
b)	**Sample preparation**	**DIN 19747 (07.09)**	☒

1.2 Heavy metals and chromium (VI) [1]

Not used

1.3 Adsorbed organic bound halogens

Not used

1.4 Physical parameters, nutrients

Not used

1.5 Polychlorinated biphenyls (PCB)

Not used

1.6 Polychlorinated dibenzodioxins and furans (PCDD/PCDF) and dioxin-like polychlorinated biphenyls (dl-PCB)

Not used

1.7 Benzo(a)pyrene (B(a)P)

Not used

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

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

Test area 2: Base

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

2.2 Heavy metals

Not used

2.3 Physical parameters, phosphate

Not used

2.4 Polychlorinated biphenyls (PCB)

Not used

2.5 Benzo(a)pyrene (B(a)P)

Not used

Test area 3: Biowaste

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

3.2 Heavy metals

Not used

3.3 Physical parameters, foreign matter

Not used

3.4 Process testing

Not used

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

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

Test area 4: Waste oil, insulating liquid

Not used

Test area 5: Landfill waste

With the first ordinance amending DepV, the German Landfill Ordinance, of 17 October 2011 (Federal Law Gazette I p. 900), the possibility of official approval set out Annex 4 No. 1 DepV was withdrawn. This means that testing in accordance with Annex 4 DepV can be carried out by independent testing bodies accredited in accordance with DIN EN ISO/IEC 17025 without additional approval by the federal states. Application of the specialist module for waste for test area 5 is therefore limited to its rules covering the determination and regular control of specialist competence.

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

5.2 Determination of total content in solid

Not used

5.3 Determination of contents in eluate

Not used

5.4 Biodegradability of the dry residue of the original substance

Not used

Test area 6: Wood waste

Not used

15 Inspections in accordance with the Inland Waterway Vessel Inspection Code on the cleaning capacity of ship sewage treatment plants or on-board sewage treatment plants

15.1 Sampling

DIN EN ISO 5667-1 (A 4) 2007-04	Guidance on the design of sampling programmes and sampling techniques
DIN 38402-A 11 2009-02	Sampling of waste water
DIN EN ISO 5667-3 (A 21) 2019-07	Preservation and handling of water samples

15.2 Physical and physico-chemical parameters

DIN EN 1622 2006-10	Determination of the threshold odour number (TON) and threshold flavour number (TFN) (Restriction*: Only method C (simplified method*))
DIN EN ISO 7887 1994-12	Examination and determination of colour
DIN EN ISO 7027 (C 2) 2000-04	Determination of turbidity
DIN 38404-C 4 1976-12	Determination of temperature
DIN EN ISO 10523 2012-04	Determination of pH
DIN EN 27888 (C 8) 1993-11	Determination of electrical conductivity
DIN EN ISO 7393-2 2019-03	Determination of free chlorine and total chlorine

15.3 Group and sum parameters

DIN 38409-41 1980-12	Determination of chemical oxygen demand (COD) in the range over 15 mg/l
DIN EN 1899-2 1998-05	Determination of biochemical oxygen demand after n days (BODn) – Part 2: Methods for undiluted samples
DIN EN 1484 1997-08	Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC)
DIN 38409-H 2 1987-03	Determination of filterable matter and the residue on ignition

Abbreviations used:

AATCC	American Association of Textile Chemists and Colorists
AbfKlärV	German Sewage Sludge Ordinance
Was	Waste water (including landfill seepage water)
AltölV	German Waste Oil Regulation
ASTM	American Society for Testing and Materials
ASU	Amtliche Sammlung von Untersuchungsmethoden (Official Collection of Test Methods) on the basis of Section 64 LFGB (German Food and Feed Act)
BGI	Berufsgenossenschaftliche Informationen (information from Employer's Liability Insurance Association)
BIA	Berufsgenossenschaftliches Institut für Arbeitsschutz (German Institute for Occupational Safety and Health)
BinSchUO	Inland Waterway Vessel Inspection Code
BioAbfV	German Biowaste Ordinance
CEC	Commission of Environmental Cooperation
DEV	Deutsche Einheitsverfahren (German standard methods)
DGHM	Deutsche Gesellschaft für Hygiene und Mikrobiologie e. V. (German Society for Hygiene and Microbiology)
DIN	Deutsches Institut für Normung e. V. (German Institute for Standardization)
DKFZ	Deutsches Krebsforschungszentrum (German Cancer Research Center)
DVWK	Deutscher Verband für Wasserwirtschaft und Kulturbau (German Association for Water Management and Land Improvement)
EN	European standard
EPA	Environmental Protection Agency, USA
GOTS	Global Organic Textile Standard
Raw	Raw and groundwater(**methods in accordance with AbwV printed in bold**)
In-house method	In-house method of the INSTITUT FRESENIUS
SOP	

HLUG	Hessisches Landesamt für Umwelt und Geologie (Hessian Agency for Nature Conservation, Environment and Geology)
IEC	International Electrotechnical Commission
ISBT	International Society of Beverage Technologists
ISO	International Organization for Standardization
JIS	Japan Industrial Standard
LAGA	Bund-/Länderarbeitsgemeinschaft Abfall (Regional Working Group on Waste)
LAWA	Bund-/Länderarbeitsgemeinschaft Wasser (Federal/Regional Working Group on Water)
NIOSH	National Institute for Occupational Safety and Health
OECD	Organisation for Economic Co-operation and Development
Sur	Surface water
Ph. Eur.	Pharmacopoeia Europaea
TrinkwV	German Drinking Water Ordinance
UBA	Umweltbundesamt (Federal Environment Agency)
USP	United States Pharmacopeia
VAH	Verbund für Angewandte Hygiene (Association for Applied Hygiene)
VDI	Verein deutscher Ingenieure (Association of German Engineers)