CR3 ANALYTIK

Deutsche Akkreditierungsstelle D-PL-21721-01-00

Accredited laboratory according to DIN EN ISO/IEC 17025:2018

Schedule of Services

As of: May 2025

Contents

Pos.	Parameter	Method
1	**Sampling**	
1.1	**Sampling of water**	
1.1.1	Sampling of industrial cooling water	DIN 38402-A 22
1.1.2	Sampling from still waters (near-shore scoop sample)	DIN 38402-A 12
1.1.3	Sampling of drinking water	DIN ISO 5667-5 (A 14)
1.1.4	Sampling of waste water	DIN 38402-A11
1.2	**On-site parameters**	
1.2.1	electrical conductivity	DIN EN 27888 (C 8)
1.2.2	pH value	DIN EN ISO 10523 (C5)
1.2.3	Temperature	DIN 38404-C 4
1.2.4	Oxygen, dissolved	DIN EN ISO 5814 (G 22)
1.2.5	Turbidity, qualitative	DIN EN ISO 7027-1 (C 21)
1.3	**Sampling of coffee, coffee products and pure caffeine**	
1.3.1	Sampling of green coffee in bags (60 kg or big bag),	ISO 4072
1.3.2	Sampling of instant coffee	ISO 6670
1.3.3	Sampling of free-flowing coffee and coffee products by mechanical means	DIN EN ISO 24333 DIN EN ISO 6644
1.3.4	Sampling of (pure) caffeine in a big bag	In-house method

1.4 Notes on sampling and sample treatment

All sample collection procedures include a detailed sampling protocol under consideration of matrix-specific characteristics as well as the adequate parameter-specific conservation of samples.
Unless otherwise agreed, water samples are discarded three weeks after reporting of the results and solid samples six weeks (OTA-samples four weeks) after.
All samples delivered or collected through CR3-Analytik GmbH & Co. KG remain the property of the client.

Pos.	Parameter	Method

2 Sample Preparation

2.1 Sample grinding and mixing

2.1.1	Grinding sample with a vibrating tube mill or rotor mill	
2.1.2	Sample preparation for ochratoxin A analysis, dry procedure or slurry procedure	
2.1.3	Preparation of a mixed sample from “n” individual samples	
2.1.4	Special preparation of special matrices	

2.2 Digestion

2.2.1	Pressure digestion for the determination of trace elements in food products (microwave pressure digestion)	DIN EN 13805
2.2.2	Digestion of caffeine for heavy metal determination	FCC Appendix III B

Pos.	Parameter	Method	Unit
3	**Analysis of coffee, coffee products, caffeine, tea and other foods of plant origin**		
3.1	**Physical, physical-chemical analysis and sensory analysis**		
3.1.1	Preparation of a green coffee sample for use in sensory analysis	ISO 6668	-
3.1.2	Sensory analysis – expert witness for the judgement of conformity with food law	DIN 10975	
3.1.3	Sensory analysis: simple descriptive test	DIN 10964	-
3.1.4	Sensory analysis: Q-grading	SCAA Protocols	-
3.1.5	Net quantity of finished packaging (as per pre-packaging regulations, FPackV)	In-house method L 0096	-
3.1.6	Declaration analysis for roasted coffee / coffee extract – secondary packaging, destination country Germany as per applicable German/EU regulations	-	-
3.1.7	Declaration analysis for roasted coffee / coffee extract - secondary packaging, destination country EU as per applicable EU regulations	-	-
3.1.8	Declaration analysis of secondary packaging of other product groups, destination countries or enquiries	-	-
3.1.9	Total migration (packaging material) Δ simulans A: 10% ethanol	ASU B 80.30-1 to B 80.30-19	mg/dm^2
3.1.10	Total migration (packaging material) Δ simulans E: Tenax poly	ASU B 80.30-1 to B 80.30-19	mg/dm^2
3.1.11	Preparation of a coffee drink for analytical purposes	DIN 10792	-
3.1.12	Olfactory and visual examination and determination of foreign matter and defects	ISO 4149 ISO 10470	%
3.1.13	Proportion of insect-damaged beans	ISO 6667 ISO 10470	%
3.1.14	Bulk density (free flow) for whole green or roasted coffee beans	ISO 6669	g/l
3.1.15	Sieve analysis of green coffee - manual and mechanical sieving (screen)	ISO 4150	%
3.1.16	Insoluble matter of instant coffee	DIN 10768	mg/kg
3.1.17	Water- soluble extract of roasted coffee	DIN 10775	mg/kg
3.1.18	Water- soluble extract of green coffee	DIN 10775-2	mg/kg

Pos.	Parameter	Method	Unit
3.1.19	pH and acid content of roasted coffee	DIN 10776-1	-
3.1.20	pH and acid content of soluble coffee	DIN 10776-2	-
3.1.21	Loss in mass of ground roasted coffee at 103 °C	DIN 10781 ISO 11294	%
3.1.22	Water content of roasted coffee using Karl-Fischer titration Δ	DIN 10772-1	%
3.1.23	Water content of soluble coffee using Karl-Fischer titration Δ	DIN 10772-2	%
3.1.24	Loss in mass of soluble coffee and soluble coffee products by heating under atmospheric pressure	DIN 10764-4	%
3.1.25	Loss in mass of soluble coffee using vacuum oven	DIN 10764-2 ISO 3726	%
3.1.26	Dry matter content of soluble coffee – sea sand method for liquid coffee extracts	DIN 10764-3	%
3.1.27	Loss in mass of green coffee at 105 °C	DIN ISO 6673	%
3.1.28	Water content of green coffee	ISO 1446	%
3.1.29	Loss on drying of green and roasted coffee using infrared drying	In-house method L 0033	%
3.1.30	Moisture of coffee and coffee products using near-infrared spectroscopy (NIR)	DIN EN 15948	%
3.1.31	Loss in mass of tea at 103°C	DIN 10800	%
3.1.32	Water extract of tea	ISO 9768	%
3.1.33	Total ash of tea, coffee and coffee products	DIN 10802	%
3.1.34	Water-soluble and water-insoluble ash of tea	DIN ISO 1576	%
3.1.35	Acid insoluble ash of tea	DIN 10805	%
3.1.36	Chloride content of ash of roasted coffee	In-house method L 0143	%
3.1.37	Water activity of roast coffee Δ	Aqua Lab	(a_w value)

Pos.	Parameter	Method	Unit
3.2	**Organic substances**		
3.2.1	Acrylamide (LC–MS/MS)	DIN EN ISO 18862	µg/kg
3.2.2	Aflatoxins (B1, B2, G1, G2)	DIN EN ISO 16050	µg/kg
3.2.3	Ochratoxin A	DIN EN 14132	µg/kg
3.2.4	Flavouring agents in coffee oils (HS-GC)	In-house method L 0087	µg/ml HS
3.2.5	Fumigation agents: Bromide Phosphine	DIN EN 13191-2 In-house method L 0089	mg/kg mg/kg
3.2.6	Chlorogenic acids	DIN 10767	%
3.2.7	Chlormequat and Mepiquat	DIN EN 15055	mg/kg
3.2.8	Dichloromethane in decaffeinated green coffee	DIN 10783	mg/kg
3.2.9	Ethyl acetate in decaffeinated green coffee	In-house method L 0079	mg/kg
3.2.10	Dichloromethane or ethyl acetate in roasted and soluble coffee	In-house method L 0073	µg/kg
3.2.11	Furan in coffee and coffee products	DIN EN 16620	µg/kg
3.2.12	Furan, methylfurane, 2-butanone in coffee and coffee products	In-house method L0116	µg/kg
3.2.13	Caffeine content of green, roasted and soluble coffee	ISO 20481	%
3.2.14	Caffeine content of tea	ISO 20481	%
3.2.15	16-O-Methylcafestol in green, roasted coffee and coffee products, HPLC	DIN 10779	mg/kg
3.2.16	16-O-Methylcafestol in green, roasted coffee and coffee products, LC MS/MS	In-house method L 0111	mg/kg
3.2.17	Kahweol in green coffee, roasted coffee and coffee products	DIN 10779	mg/kg
3.2.18	Cafestol in green coffee, roasted coffee and coffee products	DIN 10779	mg/kg
3.2.19	Pesticide residues in green coffee, roasted coffee, coffee products and tea Package B: approx. 300 active substances (further substances upon request)	DIN EN 15662	µg/kg
3.2.20	Trigonelline in green coffee, roasted coffee and coffee products	In-house method L 0090	%
3.2.21	Theobromine, Theophylline, Paraxanthine, Isocaffeine	Ph. Eur. 2.2.29	mg/kg

Pos.	Parameter	Method	Unit
3.2.22	Glyphosate, AMPA, Glufosinate in green coffee, roasted coffee, coffee products and tea	In-house method L 0134	mg/kg
3.2.23	Chlorate, Perchlorate in green coffee, roasted coffee, coffee products and tea	EURL SRM 1.4 (M1.4)	mg/kg
3.2.24	PAH-16 substances according to EFSA list Δ	ASU 00.00-160	µg/kg
3.2.25	Asparagine	In-house method L 0146	
3.2.26	Amino acids, free and total Δ	LC/MS-MS	g/100 g
3.2.27	Free and total carbohydrate contents in instant coffee	ISO 11292	g/100 g
3.2.28	MOSH/POSH and MOAH	DIN EN 16995	mg/kg
3.2.29	Melamine and cyanuric acid Δ	FDA/ORA T015	mg/kg
3.2.30	Dithiocarbamates	DIN EN 12396-2	mg/kg
3.2.31	Ethylene oxide Δ	QuEChERS GC-MS/MS	mg/kg
3.2.32	Allergens, diverse Δ	ELISA/PCR	mg/kg

3.3. Elements

3.3.1	Mercury	ASU L 00.00-19/4	mg/kg
3.3.2	Determination of selected elements by ICP-OES	DIN EN ISO 11885	mg/kg
3.3.3	Calculation of detectable heavy metals with a mass reference to the element of lead	In-house method L 0014	mg/kg

3.4 Microbiological analysis

3.4.1	Aerobic bacterial counts	DIN EN ISO 4833-1 DIN EN ISO 4833-2	cfu/g
3.4.2	Bacillus cereus, presumptive Δ	DIN EN ISO 7932	cfu/g
3.4.3	Clostridia, sulfit reducing Δ	DIN 10103	cfu/g
3.4.4	Coliform bacteria	ISO 4832	cfu/g

Pos.	Parameter	Method	Unit
3.4.5	Enterobacteriaceae	DIN EN ISO 21528-2	cfu/g
3.4.6	Escherichia coli	DIN ISO 16649-2	cfu/g
3.4.7	Yeast	ISO 21527-2	cfu/g
3.4.8	Listeria monocytogenes Δ	DIN EN ISO 11290-1	in 25 g
3.4.9	Salmonella	ISO 6579	in 25g
3.4.10	Moulds	ISO 21527-2	cfu/g
3.4.11	Staphylococcus, coagulase-positive Δ	DIN EN ISO 6888-1	cfu/g

For parameter packages, see Section 6.0

Pos.	Parameter	Method	Unit
4	**Analysis of Pure Caffeine**		
4.1.	Identity test	Ph. Eur. Caffeine Monograph	-
4.2	Purity test	Ph. Eur. Caffeine Monograph	%
4.3	Sieving of pure caffeine powder	In-house method L 0085	%
4.4	Acidity	Ph. Eur. Caffeine Monograph	mmol/kg
4.5	Turbidity	Ph. Eur. Caffeine Monograph 2.2.1	NTU
4.6	Colour	Ph. Eur. Caffeine Monograph 2.2.2 Method II	-
4.7	Melting point	Ph. Eur. Caffeine Monograph 2.2.14	°C
4.8	Loss on drying	Ph. Eur. Caffeine Monograph 2.2.32	%
4.9	Sulfated ash	Ph. Eur. Caffeine Monograph 2.4.14	%
4.10	Readily carbonizable substances	JP General Test nr. 1.15	-
4.11	Insolubles	In-house method L 0005	mg/kg
4.12	Appearance, odour and taste	In-house method L 0011	-
4.13	Chloroform solubility	In-house method L 0012	-
4.14	Sulfate	Spectroquant ® 1.01812.0001	%
4.15	Chloride	NANOCOLOR ® 918 20	%
4.16	Loss on drying (Thermogravimetric analysis IR)	In-house method L 0026	%
4.17	Related substances	Ph. Eur. Caffeine Monograph 2.2.29	%
4.18	Assay (Content determination)	USP caffeine monograph	%
4.19	Dichloromethane	USP Chapter 467	µg/kg

Pos.	Parameter	Method	Unit

5. Analysis of Water

5.1 Physical and electrochemical analysis

5.1.1	Alkalinity, total and composite Carbonate alkalinity	DIN EN ISO 9963-1(C 23) DIN EN ISO 9963-2(C 24)	mmol/l mmol/l
5.1.2	Electrical conductivity	DIN EN 27888 (C 8)	µS/cm
5.1.4	Turbidity	DIN EN ISO 7027-1 (C2)	NTU
5.1.5	pH	DIN EN ISO 10523 (C 5)	-
5.1.6	Temperature	DIN 38404-C 4	°C
5.1.7	Oxygen, dissolved	DIN EN 5814 (G 22)	mg/l O_2
5.1.8	Density of liquids by the bending vibration measurement method	In-house method L 0024	g/cm^3

5.2 Organic parameters and sum parameters

5.2.1	Filterable matter (quantitative and qualitative)	DIN 38409-H 2	mg/l
5.2.2	Base and acid capacity (K 8.2; K 4.3)	DIN 38409-H 7	mmol/l
5.2.3	Total dry residue, filtrate dry residue and residue on ignition	DIN 38409-H 1	mg/l
5.2.4	Hardness	DIN 38409-H 6	mmol/l
5.2.5	Oxidizability	In-house method L 0049	-
5.2.6	Chemical oxygen demand – COD	DIN ISO 15705 (H45)	mg/l O_2
5.2.7	Dichloromethane, Ethylacetate	DIN EN ISO 10301(F 4)	µg/l

5.3 Anions

5.3.1	Calculation of dissolved carbon dioxide, carbonate and hydrogen carbonate ions	DEV-D 8	mmol/l
5.3.2	Chloride	NANOCOLOR ® 918 20	mg/l
5.3.3	Phosphorus, total	NANOCOLOR ® 985 076	mg/l P

Pos.	Parameter	Method	Unit
5.3.4	Phosphate, ortho-	NANOCOLOR ® 985 076	mg/l P
5.3.5	Sulfate	Spectroquant ® 1.01812.0001 Spectroquant ®1.4548.0001	mg/l
5.3.6	Ammonium	NANOCOLOR ® 985 003	mg/l
5.3.7	Nitrate	NANOCOLOR ® 985 064	mg/l

5.4 Elements

5.4.1	Calcium, Magnesium complexometric	DIN 38406-E 3	mg/l
5.4.2	Iron	NANOCOLOR ® 985 037	mg/l
5.4.3	Mercury	DIN EN ISO 12846 (E 12)	mg/l
5.4.4	Selected elements by ICP-OES	DIN EN ISO 11885 (E22)	mg/l

5.5 Microbiological examinations

5.5.1	Colony counts at 22°C	ISO 6222 (K5)	cfu/ml
5.5.2	Colony counts at 36°C	ISO 6222 (K5)	cfu/ml
5.5.3	Legionella	ISO 11731	cfu/100 ml
5.5.4	Pseudomonas aeruginosa	ISO 16266 (K11)	cfu/100 ml

Pos. **Packages**

6 Package Offers

6.1 Caffeine, loss in mass (103°C)

6.2 Microbiological analysis of coffee, tea, coffee products and other food products

a. **MiBi I**
Aerobic plate count, yeasts, moulds, coliform bacteria, *Escherichia coli*

b. **MiBi II**
Aerobic plate count, yeasts, moulds, coliform bacteria, *Escherichia coli*, Enterobacteriaceae, *Salmonella* spp., Listeria Δ, Coagulase positive staphylococci Δ

c. **MiBi III**
Aerobic plate count, yeasts, moulds, coliform bacteria, *Escherichia coli*, *Salmonella* spp.

d. **MiBi IV**
Aerobic plate count, yeasts, moulds, *Escherichia coli*, *Salmonella* spp., coagulase positive staphylococci Δ

6.3 Marketability (coffee and coffee products)

Sensory analysis (including non-coffee components), net filling volume, loss in mass at 103°C, ochratoxin A + declaration analysis, caffeine

6.4 Nutritional analysis Δ

a.	Big 7 (extension possible) Energy, fat, saturated fat, carbohydrates, sugar, protein and salt	64 LFGB L 18.00-16: 1999-11 (mod.)

Pos.

7 Abbreviations and Important Notes

7.1 Abbreviations

mg/l	milligrams per litre
mg/kg	milligrams per kilogramme
µg/kg	micrograms per kilogramme
NTU	nephelometric turbidity units
mmol/l	millimoles per litre
In-house method	analytics as per standard operating procedure
ASU	official collection of examination procedures (German: Amtliche Sammlung von Untersuchungsverfahren)
DIN	German Institute for Standardisation (German: Deutsches Institut für Normung)
EN	European norm
FCC	Food Chemical Codex
ISO	International Organisation for Standardisation
JP	Japanese Pharmacopoeia
Ph.Eur.	European Pharmacopoeia
SCAA	Specialty Coffee Association of America
USP	United States Pharmacopeia

Legend

Δ	Subcontract to accredited partner laboratory

7.2 Important notes

For large orders or framework agreements, we will be glad to provide you with a detailed offer.

Our Terms & Conditions represent the basis for any acceptance of orders.

The current versions of all used/offered accredited testing methods are listed in the annex to accreditation certificate and in the flex-list.