

Deutsche Akkreditierungsstelle GmbH

Annex to the Accreditation Certificate D-PL-15209-01-00 according to ISO/IEC 17025:2017

Period of validity: 24.10.2019 to 23.10.2024

Date of issue: 24.10.2019

Holder of certificate:

**Ghana Standards Authority
testing laboratory
Shiashie-Legon-Madina Road, Near Gulf House
P. O. BOX MB 245, ACCRA, GHANA**

for its laboratories

**Pesticide Residues Laboratory
Mycotoxins and Histamine Laboratory
Metallic Contaminants Laboratory
Microbiology Laboratory
Food and Drinks Laboratory**

Tests in the fields:

**physical, physico-chemical, chemical analysis of foodstuff;
microbiological analysis of water, food, animal feeding stuff and environmental samples in the area
of food production and food handling**

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

The used test methods are identified with the symbols of the locations stated below:

PR = Pesticide Residues Laboratory
MH = Mycotoxins and Histamine Laboratory
MC = Metallic Contaminants Laboratory
ML = Microbiology Laboratory
FD = Food and Drinks Laboratory

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1 Physical, physico-chemical, chemical analysis of Food

1.1 Determination of Pesticide Residues in Fruits, Vegetables and Products of Plant Origin using Gas Chromatography with Conventional Detectors (GC-ECD; GC-PFPD) (PR)

GSA-SM-T01-D 2019-02	Determination of Organophosphorous Pesticide Residues in Fruits and Vegetables with GC-PFPD
GSA-SM-T02-C 2019-02	Determination of Organochloride Pesticide Residue in Fruits and Vegetables with GC-ECD
GSA-SM-T03-C 2019-02	Multiresidue Determination of Pesticides in Low-Fatty Matrices with GC-ECD and GC-PFPD
GSA-SM-T05-C 2019-02	Determination of Synthetic Pyrethroid Pesticide Residue in Fruits and Vegetables with GC-ECD

1.2 Determination of Aflatoxins in Cereals, Nuts and Derived Products using High Performance Liquid Chromatography by conventional Spectrofluorometric Detector (MH)

ISO 16050 2003-09	Foodstuffs - Determination of aflatoxin B1, and the total content of aflatoxins B1, B2, G1 and G2 in cereals, nuts and derived products - High-performance liquid chromatographic method <i>(Modification: Extraction solvent ratio 80/20, different derivatization by Kobra cell and Potassium Bromide)</i>
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1.3 Determination of Histamine and other Amines in Fish and Fishery Products using High Performance Liquid Chromatography by conventional Fluorescence-Detector (MH)

GSA-SM-T21 2018-07	Method for the determination of Histamine in fish and fishery products
GSA-SM-T80 2019-01	Method for determination of Biogenic amines in fish and fishery products

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1.4 Determination of Mycotoxins in Fruits, Juices and their Concentrates using High Performance Liquid Chromatography by conventional UV-Detector (MH)

ISO 8128-1
1993-07

Apple juice, apple juice concentrates and drinks containing apple juice - Determination of Patulin content - Part 1: Method using high-performance liquid chromatography
(Modification: *using acetonitrile as extraction solvent; AFLAPAT MYCOSEP SPE Column for purification; 50µl injection volume; 90:10 (Acetonitrile:Water) standard solvent and mobile phase*)

1.5 Determination of Trace Elements in Fish and Fishery Products using Atomic Absorption Spectrometry (MC)

BS EN 13806
2002-09

Foodstuffs. Determination of trace elements. Determination of mercury by cold-vapour atomic absorption spectrometry (CVAAS) after pressure digestion
(Modification: *here for Fish and Fishery Products*)

BS EN 14084
2003-04

Foodstuffs. Determination of trace elements. Determination of lead, cadmium, zinc, copper and iron by atomic absorption spectrometry (AAS) after microwave digestion
(Modification: *here for Fish and Fishery Products*)

1.6 Determination of Acidity, Soluble Solids, Moisture Contents and Ash in Non-alcoholic Beverage, Cereals and Derived Products using physical and physico-chemical testing methods (FD)

ISO 712
2009-11

Cereals and cereal products - Determination of moisture content - Reference method

ISO 750
1998-08

Fruit and vegetable products - Determination of titratable acidity
(Modification: *here for Non-alcoholic beverage*)

GS ISO 2173
2006

Fruit and vegetable products - Determination of soluble solids - Refractometric method
(Modification: *here for Non-alcoholic beverage*)

AOAC
Method 923.03
2016

Ash of Flour
(Modification: *here for Non-alcoholic beverage*)

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2 Cultural-Microbiological Determination of Microorganisms in Food, Animal Feeding Stuff and environmental samples in the area of food production and food handling (ML)

ISO 4831 2006-08	Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of coliforms - Most probable number technique
ISO 4832 2006-02	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coliforms - Colony-count technique
ISO 4833-1 2013-09	Microbiology of the food chain - Horizontal method for the enumeration of microorganisms - Part 1: Colony count at 30 degrees C by the pour plate technique
ISO 4833-2 2013-09	Microbiology of the food chain - Horizontal method for the enumeration of microorganisms - Part 2: Colony count at 30 degrees C by the surface plating technique
ISO 6579-1 2017-02	Microbiology of the food chain - Horizontal method for the detection, enumeration and serotyping of Salmonella – Part 1: Detection of Salmonella spp. (Modification: <i>without Annex D</i>)
ISO 6888-2 1999-02	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of coagulase-positive staphylococci (<i>Staphylococcus aureus</i> and other species) – Part 2: Technique using rabbit plasma fibrinogen agar medium
ISO 7251 2005-02	Microbiology of food and animal feeding stuffs - Horizontal method for the detection and enumeration of presumptive <i>Escherichia coli</i> - Most probable number technique
ISO 9308-1 2014-09 Amd. 1 2016-12	Water quality - Enumeration of <i>Escherichia coli</i> and coliform bacteria - Part 1: Membrane filtration method for waters with low bacterial background flora (Modification: <i>here for environmental samples in the area of food production and food handling</i>)
ISO 16649-2 2001-04	Microbiology of food and animal feeding stuffs - Horizontal method for the enumeration of beta-glucuronidase-positive <i>Escherichia coli</i> - Part 2: Colony-count technique at 44 degrees C using 5-bromo-4-chloro-3-indolyl beta-D-glucuronide

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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

3 Cultural-Microbiological Determination of Microorganisms in Water (ML)

ISO 6222
1999-05 Water quality - Enumeration of culturable micro-organisms - Colony count by inoculation in a nutrient agar culture medium

ISO 9308-1
2014-09
Amd. 1 2016-12 Water quality - Enumeration of Escherichia coli and coliform bacteria - Part 1: Membrane filtration method for waters with low bacterial background flora

ISO 9308-2
1990-10 Water quality - Detection and enumeration of coliform organisms, thermotolerant coliform organisms and presumptive Escherichia coli - Part 2: Multiple tube (most probable number) method (withdrawn standard)

Abbreviations used:

AOAC	Association of Official Agricultural Chemists
BS	British Standards Institution
DIN	Deutsches Institut für Normung e. V.
EN	European Union
GSA	Ghana Standards Authority
IEC	International Electrotechnical Commission
ISO	International Organisation for Standardization