SCOPE OF ACCREDITATION TO ISO/IEC 17043:2010

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PROFICIENCY TESTING PROVIDER

Valid To: September 30, 2025 Certificate Number: 3477.01

In recognition of the successful completion of the A2LA evaluation process, this proficiency testing provider has been found to meet the ISO/IEC 17043:2010, "Conformity Assessment-General Requirements for Proficiency testing". Accreditation is granted to this provider to provide proficiency testing samples in the following programs:

Program Name	Sample Matrix	Techniques Used to Determine Assigned Values/Uncertainty
1. Chemistry in Food 1.1 Lipid 1.2 Protein 1.3 Total Ash 1.4 Calcium 1.5 Lactose 1.6 Phosphorus 1.7 Saturated fat 1.8 Total carbohydrate 1.9 Sodium 1.10 Energy 1.11 Moisture 1.12 Acid-insoluble ash 1.13 Water-insoluble ash 1.14 Crude fiber 1.15 Water-soluble matter (coffee) 1.16 Caffeine (coffee)	Food and Beverage	Assigned values and uncertainties determined by consensus values from participants

Program Name	Sample Matrix	Techniques Used to Determine Assigned Values/Uncertainty
2. Nutrients in Liquid Milk 2.1 Protein 2.2 Fat 2.3 Dry matter	Liquid Milk	Assigned values and uncertainties assigned by consensus values from participants
3. Toxins and Residues in Food 3.1 Heavy metals (Pb, Cd, As, Hg, Cu, Zn, Sb, Sn, etc.) 3.2 Mycotoxins (Aflatoxins, Ochratoxin A, Deoxynivalenol, etc.) 3.3 Antibiotics (Tetracyclines, Chloramphenicol, etc.) 3.4 β-Agonist (Salbutamol, Clenbuterol, Ractopamine) 3.5 Pesticide residues (Carbaryl, Carbofuran, Tebuconazole, Chlorpyrifos Methyl, Chlorpyrifos Ethyl, Malathion, Ethyl Parathion, Methyl Parathion, Fenitrothion, Diazinon, Endosulfan Sulfate, Heptachlor, Aldicarb, Indoxacarb, Imidacloprid, Thiamethoxam, Dimethoate, etc.) 3.6 Food additives (Nitrite, nitrate) 3.7 Other residues (Malachite Green, Leucomalachite Green)	Food and Beverage	Assigned values and uncertainties assigned by consensus values from participants
4. Chemistry in Animal Feedstuff 4.1 Protein 4.2 Fat 4.3 Calcium 4.4 Phosphorus 4.5 Total Ash 4.6 Amino acids (Lysine, Methionine, Threonine) 4.7 Salbutamol 4.8 Heavy Metals (Pb, Cd, As, Hg) 4.9 Aflatoxins 4.10 Clenbuterol 4.11 Ractopamine 4.12 HCl-insoluble ash 4.13 Crude fiber 4.14 Moisture 4.15 Minerals (Cu, Zn, Fe, Mn, Na, K, Se, etc.) 4.16 Ethoxyquin 4.17 Cyanhydric acid 4.18 Fluoride 4.19 Free and total gossypol 4.20 NaCl	Animal Feedstuff	Assigned values and uncertainties determined by consensus values from participants

Program Name	Sample Matrix	Techniques Used to Determine Assigned Values/Uncertainty
5. Chemistry in Sauce 5.1 Nitrogen (N) 5.2 Ammonical nitrogen (N-NH_3) 5.3 Sodium Chloride (NaCl) 5.4 Amino acid nitrogen 5.5 Inorganic arsenic, total arsenic 5.6 Acid (as acetic acid) 5.7 pH	Sauce (Fish sauce, soy sauce)	Assigned values and uncertainties assigned by consensus values from participants
6. Chemistry in Fats and Oils (Vegetable, Animal) 6.1 Iodine value 6.2 Peroxide value 6.3 Free fatty acids content (as oleic acid) 6.4 Saponification value 6.5 Insoluble impurities	Vegetable Oil, Animal Fats	Assigned values and uncertainties assigned by consensus values from participants
7. Chemistry in Wine 7.1 Ethanol 7.2 Methanol 7.3 Aldehydes (Chromatography, Titration) 7.4 Esters (Chromatography, Titration) 7.5 Furfural	Wine, Spirit Liquid	Assigned values and uncertainties assigned by consensus values from participants

Program Name	Sample Matrix	Techniques Used to Determine Assigned Values/Uncertainty
8. Chemistry in Fertilizer 8.1 Total nitrogen content, nitrate nitrogen ($N\text{-}NO_3$) 8.2 Soluble and available phosphorus content 8.3 Soluble and available potassium content 8.4 Total and available silicon content 8.5 Calcium content (Ca) 8.6 Magnesium content (Mg) 8.7 Sulfur content (S) 8.8 Iron content (Fe) 8.9 Zinc content (Zn) 8.10 Copper content (Cu) 8.11 Manganese content (Mn) 8.12 Total organic matter 8.13 Arsenic content (As) 8.14 Cadmium content (Cd) 8.15 Lead content (Pb) 8.16 Nickel content (Ni) 8.17 Chromium content (Cr) 8.18 Mercury content (Hg) 8.19 Humic acid 8.20 Fulvic acid 8.21 Moisture 8.22 Biuret 8.23 Free acids (as P_2O_5, as H_2SO_4, and as HNO_3) 8.24 Water-soluble boron 8.25 Acid-soluble boron 8.26 Cobalt content (Co) 8.27 Molybdenum content (Mo) 8.28 pH 8.29 Density	Fertilizer	Assigned values and uncertainties determined by consensus values from participants
9. Chemistry in water 9.1 Cations: Fe, Cu, Zn, Mn, Ca, Mg, K, Na, total hardness, Al, Ba, B, Cd, Cr, Co, Pb, Mo, Ni, Ag, Si, As, Sb, Se, Hg, etc. 9.2 Anions: NO_2^-, NO_3^-, Cl^-, SO_4^{2-}, PO_4^{3-}, NH_4^+, etc. 9.3 pH 9.4 Conductivity 9.5 Total dissolved solids (TDS) 9.6 Total suspended solids (TSS) 9.7 Permanganate index	Water	Assigned values and uncertainties determined by consensus values from participants

Program Name	Sample Matrix	Techniques Used to Determine Assigned Values/Uncertainty
10. Heavy Metals in Soil 10.1 Arsenic content (As) 10.2 Cadmium content (Cd) 10.3 Lead content (Pb) 10.4 Mercury content (Hg) 10.5 Copper content (Cu) 10.6 Zinc content (Zn)	Soil	Assigned values and uncertainties assigned by consensus values from participants
11. Chemistry in Diesel Oil 11.1 Sulfur content 11.2 Cetane index 11.3 Distillation 11.4 Flash point closed cup 11.5 Kinematic viscosity 11.6 Pour point 11.7 Density	Diesel oil	Assigned values and uncertainties assigned by consensus values from participants
12. Chemistry in Lubricant 12.1 Kinematic viscosity 12.2 Viscosity index 12.3 Flash point open cup 12.4 Total base number (TBN) 12.5 Density at 15 °C 12.6 Foaming tendency 12.7 Water content 12.8 Total metals (Ca, Mg, Zn) 12.9 Copper strip corrosion 12.10 Pentane insolubles	Lubricant	Assigned values and uncertainties assigned by consensus values from participants
13. Fuel oil 13.1 Density 13.2 Kinematic viscosity 13.3 Sulfur content 13.4 Pour point 13.5 Flash point closed cup 13.6 Ash content 13.7 Conradson carbon 13.8 Water content 13.9 Sediment 13.10 Calorific	Fuel oil	Assigned values and uncertainties determined by consensus values from participants

Program Name	Sample Matrix	Techniques Used to Determine Assigned Values/Uncertainty
14. Gasoline 14.1 Reid vapor pressure 14.2 Density 14.3 Distillation 14.4 Copper corrosion 14.5 Gum 14.6 Sulfur content 14.7 Benzene 14.8 Aromatic hydrocarbon 14.7 Olefin 14.8 Oxygen 14.9 Oxygenate (ethanol, iso-propyl alcohol, iso-butyl alcohol, tert-butyl alcohol, ether (C ≥ 5), MTBE, etc.) 14.10 Metals: Pb, Fe, Mn, total metals (Fe, Mn), etc.	Gasoline	Assigned values and uncertainties determined by consensus values from participants
15. Hard coal 15.1 Ash 15.2 Volatile matter 15.3 Sulfur 15.4 Calories 15.5 Fixed carbon 15.6 Moisture (dry in air and dry with nitrogen)	Coal and Coke	Assigned values and uncertainties assigned by consensus values from participants
16. Food contact materials 16.1 Immigration test: Heavy metals in aqueous extract, in acetic acids (Pb, Cd, Hg, etc.) 16.2 Immigration test: Phenol, formaldehyde in water 16.3 Immigration test: Dry residue in water, ethanol 20 %, acetic acid 4 %, heptane 16.4 Metals: Pb, Cd, As, Ba, Cr, Hg, Zn, etc. 16.5 Diphenyl carbonate	Food contact materials (paper, plastic, metal, ceramic, glass etc.)	Assigned values and uncertainties assigned by consensus values from participants
17. Chemistry and Mechanic – Physics in Steel 17.1 Tensile test (Upper yield strength, tensile strength, elongation after fracture) 17.2 Chemical composition: (C, Mn, Si, S, P, Cr, Ni, B, V, Cu, Al, Ti, etc.) 17.3 Hardness (Vickers, Rockwell, etc.) 17.4 Bend test 17.5 Impact test (KV8, etc.)	Steel	Assigned values and uncertainties assigned by consensus values from participants

Program Name	Sample Matrix	Techniques Used to Determine Assigned Values/Uncertainty
18. Physics – Chemistry in Cement 18.1 Compressive strength (3 days, 7 days, 28 days, etc.) 18.2 Water for consistent 18.3 Initial setting time 18.4 Final setting time 18.5 Soundness (Le Chatelier method) 18.6 Sieve 0.09 mm 18.7 Mass density 18.8 Surface fineness 18.9 Insoluble residue content 18.10 SO_3 content 18.11 MgO content 18.12 CaO content 18.13 Soluble Na_2O content 18.14 Soluble K_2O content 18.15 Al_2O_3 content 18.16 Fe_2O_3 content 18.17 SiO_2 content 18.18 Loss on ignition 18.19 Chloride content (Cl^-) 18.20 Autoclave expansion	Cement	Assigned values and uncertainties determined by consensus values from participants
19. Physics in Concrete 19.1 Density 19.2 Compressive strength	Concrete	Assigned values and uncertainties assigned by consensus values from participants
20. Electrical Wire/Cable 20.1 Direct Current (DC) Resistance of 1 km Conductor at 20°C 20.2 Thickness of sheath 20.3 Tensile test (tensile strength, elongation after fracture of cable insulation)	Electrical Wire	Assigned values and uncertainties assigned by consensus values from participants

Program Name	Sample Matrix	Techniques Used to Determine Assigned Values/Uncertainty
21. Microbiology in Food and Feedstuff 21.1 Total Aerobic Plate Count (Enumeration) 21.2 *Escherichia coli* (Detection/Enumeration) 21.3. *Staphylococcus aureus* / coagulase-positive staphylococci (Enumeration) 21.4 Coliforms (Enumeration) 21.5 *Salmonella* spp. (Detection) 21.6 *Listeria monocytogenes* (Detection) 21.7 Yeasts and Molds (Enumeration) 21.8 *Vibrio parahaemolyticus* (Detection/Enumeration) 21.9 Enterobacteriaceae (Enumeration) 21.10 *Bacillus cereus* (Enumeration) 21.11 *Clostridium perfringens* (Enumeration) 21.12 Total sulfite-reducing anaerobes (Enumeration) 21.13 Total anaerobic count (Enumeration) 21.14 *Escherichia coli* (Detection) 21.15 *Listeria spp.* (Detection) 21.16 *Vibrio cholera* (Detection) 21.17 *Saccharomyces cerevisiae* (Enumeration)	Food and feedstuff (Meat, milk, cereal, aquatic products, nutritious powder, beverages, feedstuff, etc.)	Assigned values and uncertainties determined by consensus values from participants
22. Microbiology in Water 22.1 Total plate count (Enumeration) 22.2 Coliforms (Enumeration) 22.3 Fecal Coliforms (Enumeration) 22.4 *Escherichia coli* (Enumeration) 22.5 Enterococci (Enumeration) 22.6 Positive coagulase Staphylococci/ *Staphylococcus aureus (Enumeration)* 22.7 Yeast and molds (Enumeration) 22.8 Spores of sulfite-reducing anaerobes (Enumeration) 22.9 *Clostridium perfringens* (Enumeration) 22.10 Total sulfite-reducing anaerobes (Enumeration) 22.11 *Pseudomonas aeruginosa* (Enumeration)	Water	Assigned values and uncertainties assigned by consensus values from participants

Program Name	Sample Matrix	Techniques Used to Determine Assigned Values/Uncertainty
23. Microbiology in Fertilizer 23.1 *Escherichia coli* (Enumeration) 23.2 Salmonella (Detection) 23.3 Nitrogen fixing microorganisms (Enumeration) 23.4 Phosphate-solubilizing microorganisms (Enumeration) 23.5 Cellulose-solubilizing microorganism (Enumeration)	Fertilizer	Assigned values and uncertainties assigned by consensus values from participants
24. Interlaboratory comparison programs when there are less than 5 participants (usually for 2 laboratories)	Accredited matrices listed	Assigned values and uncertainties come from a reference laboratory, reference material / certified reference material, or the organized PT program

Accredited Proficiency Testing Provider

A2LA has accredited

QUALITY ASSURANCE AND TESTING CENTER 3 (QUATEST 3)

Dong Nai Province, VIETNAM

This accreditation covers the specific proficiency testing schemes listed on the agreed upon Scope of Accreditation. This provider is accredited in accordance with the recognized International Standard ISO/IEC 17043: 2010 *Conformity assessment - General requirements for proficiency testing*. This accreditation demonstrates technical competence for a defined scope and the operation of a quality management system.

Presented this 17th day of November 2021.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3477.01
Valid to September 30, 2025

For the proficiency testing schemes to which this accreditation applies, please refer to the provider's Scope of Accreditation.