



Annex F1/17 to the Certificate No. **16-6**

SCOPE of ACCREDITATION

of the

Testing Laboratory

“A. TSAKALIDIS Inc.”

Tested Materials/Products	Types of test/Properties measured	Applied methods/Techniques used
Chemical Tests		
1. Water and wastewater	1. Determination of Conductivity (*)	APHA 2510 B
	2. Determination of Alkalinity	In house method O.106 based on APHA 2320 B
	3. Determination of pH (*)	APHA 4500-H ⁺
	4A. Determination of Ammonium (*)	APHA 4500-NH ₃ F
	4B. Determination of Ammonium (*)	In house method O.304 based on DIN 38406-E5-1 and ISO 7150-1
	5. Determination of Calcium	APHA 3111 B
	6. Determination of Sulfates (*)	In house method O.306 based on APHA 4500-SO ₄
	7. Determination of Nitrates (*)	In house method O.305 based on DIN 38405-D9-2 & ISO 7890-1-2
	8. Determination of Nitrites (*)	In house method O.301 based on APHA 4500-NO ₂ B
	9. Determination of Potassium	APHA 3500-K B
	10. Determination of Magnesium	APHA 3111 B
	11. Determination of Sodium (*)	In house method O.504 based on APHA 3500-Na B
	12. Determination of Zinc	In house method O.515 based on APHA 3111B
	13. Determination of Silicates	APHA 4500-SiO ₂ C
	14. Determination of Chloride (*)	APHA 4500-Cl B
	15. Determination of Turbidity (*)	In house method O.114 based on APHA 2130 B
	16. Determination of Cadmium (*)	ISO 15586:2003
	17. Determination of Lead (*)	
	18. Determination of Iron (*)	
19. Determination of Copper (*)		

Tested Materials/Products	Types of test/Properties measured	Applied methods/Techniques used
	20. Determination of Aluminum (*)	
	21. Determination of Nickel (*)	
	22. Determination of Manganese (*)	
	23. Determination of Chromium (*)	
	24. Determination of Cobalt	
	25. Determination of Molybdenum	
	26. Determination of Arsenic (*)	In house method O.507 / Hydride-A.A.S.
	27. Determination of Antimony (*)	A.A.S.
	28. Determination of Mercury (*)	In house method O.506 / Hydride-A.A.S.
	29. Determination of C.O.D.	In house method O.308 based on DIN 38409-H41 & ISO 6060
	30. Determination of Cyanides (*) (total, free)	In house method O.309
	31. Determination of Selenium (*)	In house method O.509
	32. Determination of Carbonate	APHA 2320 B
	33. Determination of Bicarbonate	APHA 2320 B
	34. Determination of Total Solids (*)	APHA 2540B
	35. Determination of Total Dissolved Solids	APHA 2540C
	36. Determination of Total Suspended Solids	APHA 2540D
	37. Determination of Total Nitrogen	In house method O.314/photometry
	38. Determination of Total Phosphorus	In house method O.315/photometry
	39. Determination of metals (Al*, As*, Ba, Be, Ca, Cd*, Co, Cr*, Cu*, Fe*, K, Mg, Mn*, Mo, Na*, Ni*, P, Pb*, Sb*, Se*, Sn, Sr, <u>Ti</u> , Tl, V, Zn, B*, U, Hg*, Li)	In house method O.520 based on EPA Method 6020B, ISO 17294-1:2004 & ISO 17294-2:2016 / ICP-MS
	40. Determination of Bromide	In house method O.628 by Ion Chromatography
	41. Determination of Nitrate (*)	
	42. Determination of Sulphate (*)	
	43. Determination of Fluoride (*)	
	44. Determination of Phosphate (*)	
	45. Determination of Chloride (*)	
	46. Determination of Cr (VI)	EPA 7196 A
	47. Determination of phenols	In house method O.311 based on APHA 5530
48. Determination of Total Hardness (calculation)	APHA 2340B	
2. Potable, surface and ground water	1. Determination of Total Hardness (as CaCO ₃)	ELOT 170:1980
	2. Determination of Fluoride (*)	In house method O.307 based on APHA 4500-FD
	3. Determination of Boron (*)	APHA 4500-B B

Tested Materials/Products	Types of test/Properties measured	Applied methods/Techniques used
	4. Determination of Bromates (*)	In house method O.624
	5. Determination of Acrylamide (*)	In house method O.625
	6. Determination of Trihalomethanes (*) (Chloroform, Dichlorobromomethane, Chlorodibromomethane, Bromoform)	In house method O.617
	7. Determination of 1,2-Dichloroethane (*)	
	8. Determination of Trichloroethene (*)	
	9. Determination of Tetrachloroethene (*) (*)	
	10. Determination of Benzene (*)	
	11. Determination of Vinyl chloride (*)	
	12. Determination of Epichlorohydrin (*)	
	13. Determination of Color	APHA 2120 C
	14. Determination of Chlorine residual (total, free) (*)	In house method O.312
	15. Determination of Oxidisability (*) (Permanganate index value)	ELOT 827
	16. Determination of 16 Polycyclic Aromatic Hydrocarbons: Acenaphthene, Acenaphthylene, Anthracene, Benzo[a]anthracene, Benzo[a]pyrene(*), Benzo[b]fluoranthene(*), Benzo[ghi]perylene(*), Benzo[k]fluoranthene(*), Chrysene, Dibenzo[a,h]anthracene, Fluoranthene, Fluorene, Indeno[1.2.3-cd]pyrene(*), Naphthalene, Phenanthrene, Pyrene	In house method O.631 based on EPA 525.3
	17. Determination of Bromide	In house method O.628 by Ion Chromatography
	18. Determination of Nitrate (*)	
	19. Determination of Sulphate (*)	
	20. Determination of Fluoride (*)	
	21. Determination of Phosphate (*)	

Tested Materials/Products	Types of test/Properties measured	Applied methods/Techniques used
	22. Determination of Chloride (*)	
	23. Determination of Cr (VI)	EPA 7196 A
3. Pool water	Determination of Chlorine residual (total, free) (*)	In house method O.312
4. Products of animal and vegetable origin	Determination of Nitrogen	ISO 1871:2009
5. Foodstuffs and drinks ESYD G- METALS/01/01/20-10- 2016	1. Determination of Moisture and Dry total matter	Greek Food Code, VolumeII, Part B, Γ1
	2. Determination of Ash	Greek Food Code, VolumeII, Part B, Γ2
	3. Determination of Fat	In house method O.140 based on Weibull-Stoldt
	4. Determination of Cadmium	In house method O.511 based on AOAC 999.10 according to method specification requirements of regulation EC 333/2007 and as amended by regulation EC 836/2011
	5. Determination of Lead	In house method O.511 based on AOAC 999.10
	6. Determination of Sodium	In house method O.514
	7. Determination of metals (As, Ca, Cd**, Cr, Cu, Fe, Hg**, K, Mg, Mn, Na, P, Pb**, Se, Sn**, Zn)	In house method O.521 based on AOAC 2015.01 / ICP-MS
	8. Determination of Sorbic and Benzoic acid	In house method O.608 / HPLC
6. Dried nuts, cereals and their products	Determination of Aflatoxins B1, B2, G1, G2	In house method O.603 based on AOAC 991.31:2000
7. High carbohydrate content food, Wine	Determination of Ochratoxin A	In house method O.622
8. Fish, wine	Determination of histamine	In house method O.611
9. Meat, fish and their products, high water-content food, cereals and products, dried nuts	Determination of Mercury	In house method O.512 based on AOAC 999.10 according to method specification requirements of regulation EC 333/2007 and as amended by regulation EC 836/2011
10. Foodstuffs of vegetable origin, fresh and processed	1. Determination of Dietary fibers	In house method O.118 based on AOAC 991.43
	2. Determination of total & digestible carbohydrates (calculation)	In house method O.144 based on ε FAO-Food energy methods of analysis and conversion factors
	3. Determination of Energy (calculation)	In house method O.144 based on Regulation (EC) 1169/2011
11. Cereals and their products	Determination of Propionic acid	In house method O.600

Tested Materials/Products	Types of test/Properties measured	Applied methods/Techniques used
12. Cereals and their products, potato and its products	Determination of acrylamide	In house method O.637 based on method of QuEChERS (AOAC)
13. Animal feeds	1. Determination of Total Fat	Regulation (EC) 152/2009, Method H, 2.2
	2. Determination of directly extractable Fats	Regulation (EC) 152/2009, Method H, 2.1
	3. Determination of crude fibre	In house method O.116
	4. Determination of Moisture and Dry total matter	In house method O.113
	5. Determination of Ash	In house method O.111
	6. Determination of Nitrogen	ISO 1871:2009
14. Materials in contact with foodstuffs	1. Overall migration into aqueous simulants (A, B, C) and simulant D1 (50% ethanol) by total immersion	EN 1186-3:2002
	2. Overall migration into aqueous simulants (A, B, C) and simulant D1 (50% ethanol) by article filling	EN 1186-9:2002
	3. Overall migration into aqueous simulants (A, B, C) and simulant D1 (50% ethanol) using a pouch	EN 1186-7:2002
	4. Overall migration into aqueous simulants (A, B, C) and simulant D1 (50% ethanol) by cell	EN 1186-5:2002
	5. Overall migration into simulant D2 (vegetable oil) by total immersion	In house method O.626 based on EN 1186-2:2002
	6. Overall migration into simulant D2 (vegetable oil) by article filling	In house method O.629 based on EN 1186-8:2002
	7. Overall migration into simulant D2 (vegetable oil) using a pouch	In house method O.627 based on EN 1186-6:2002
	8. Overall migration into simulant D2 (vegetable oil) by cell	In house method O.633 based on EN 1186-4:2002
	9. Overall migration using simulant E (adsorption by poly(2,6-diphenyl-p-phenylene oxide)- Tenax®)	In house method O.125 based on EN 1186-13 B:2002 & EN 14338:2003
	10. Overall migration into Substitutes of simulant D2 (Ethanol 95% and Isooctane) by using: total immersion, pouch, cell and filling.	EN 1186-14:2002
	11. Specific migration of Primary Aromatic Amines into aqueous simulants (A, B, C)	BVL L 00.00-6
	12. Specific migration of Bisphenol A into aqueous simulants (A, B,C) and simulant D ₁ (50% ethanol) and simulant D ₂ (vegetable oil)	In house method O.634/HPLC-FLD

Tested Materials/Products	Types of test/Properties measured	Applied methods/Techniques used
	13. Specific migration of 10 Phthalate Esters into simulant D ₂ (vegetable oil): DMP: Dimethyl Phthalate DEP: Diethyl Phthalate DIBP: Diisobutyl Phthalate DBP: Dibutyl Phthalate BBP: Benzyl-butyl Phthalate DEHP: Bis (2-ethylhexyl) phthalate DCHP: Dicyclohexyl Phthalate DNOP: Di-n-octyl Phthalate DINP: Diisononyl Phthalate DIDP: Diisodecyl Phthalate	In house method O.644 based on EN 13130-1:2004 & Food Additives and Contaminants, 1999, Vol. 16, No. 5, 197-206
	14. Specific migration of metals into simulant 3% acetic: Al, As, Ba, Ca, Cd, Co, Cr, Cu, Eu, Fe, Gd, Hg, K, La, Li, Mg, Mn, Na, Ni, Pb, Sb, Tb, Zn.	In house method O.522 based on ISO 17294-1:2004 & ISO 17294-2:2016 / ICP-MS
	15. Specific migration of isophthalic and terephthalic acid into aqueous stimulants and oil.	In house method O.650 based on EN 13130-2
15. Materials in contact with foodstuffs- Paper and board	1. Determination of Pentachlorophenol	In house method O.635 based on ISO 15320:2011
	2. Determination of Cadmium	In house method O.518 atomic absorption / graphite oven
	3. Determination of Lead	In house method O.518 atomic absorption / graphite oven
	4. Determination of Mercury	In house method O.519 atomic absorption hydride technique
	5. Determination of Cadmium	In house method O.523/ ICP-MS
	6. Determination of Lead	In house method O.523/ ICP-MS
	7. Determination of Mercury	In house method O.523/ ICP-MS
16. Soil and solid wastes	Determination of C10-C40	In house method O.649 based on EN 14039
17. Foods, Fats and Oils	Composition of Fatty Acids (saturated, unsaturated, monounsaturated, polysaturated, trans, Ω3 & Ω6)	In house method O.606 based on AOAC 996.06
18. Vegetable oils	Determination of 10 Phthalate Ester: DMP: Dimethyl Phthalate DEP: Diethyl Phthalate DIBP: Diisobutyl Phthalate DBP: Dibutyl Phthalate BBP: Benzyl-butyl Phthalate DEHP: Bis (2-ethylhexyl) phthalate DCHP: Dicyclohexyl Phthalate DNOP: Di-n-octyl Phthalate DINP: Diisononyl Phthalate DIDP: Diisodecyl Phthalate	In house method O.651 based on Food Additives and Contaminants, 1999, Vol. 16, No. 5, 197-206
19. Bakery and Pastry Raw Materials, Flour	Determination of Ascorbic Acid	In house method O.647 / HPLC/DAD

Tested Materials/Products	Types of test/Properties measured	Applied methods/Techniques used
Microbiological Tests		
1. Water for human consumption, surface water, groundwater, pool water, sea water,	Detection and enumeration of <i>Escherichia coli</i> and coliform bacteria	ISO 9308-1:2014
2. Water for human consumption, surface water, groundwater, pool water, sea water	1. Detection and enumeration of intestinal enterococci	ISO 7899-2:2000
	2. Enumeration of culturable microorganisms at 22±2 °C and at 36±2 °C	ISO 6222:1999
3. Water for human consumption, surface water, groundwater, pool water	1. Detection and enumeration of <i>Pseudomonas aeruginosa</i>	ISO 16266:2006
	2. Detection and enumeration of <i>Cl. perfringens</i> (including spores)	ISO 14189:2013
4. Potable, surface, groundwater, pool and air conditioning systems water	Enumeration of <i>Legionella</i>	ISO 11731:2017
5. Wastewater	1. Enumeration of Total coliforms	APHA 9222B
	2. Enumeration of Fecal coliforms	APHA 9222D
	3. Enumeration of Total coliforms and E. Coli	ISO 9308-1:2014
6. Food and animal feeding stuffs	1. Enumeration of total coliforms	ISO 4832:2006
	2. Enumeration of <i>Escherichia coli</i>	ISO 7251:2005
	3. Detection of <i>Listeria monocytogenes</i>	ISO 11290-1:2017
	4. Detection of <i>Salmonella</i> spp. (ex svs typhi, paratyphi)	ISO 6579-1 :2017
	5. Enumeration of coagulase positive Staphylococcus	ISO 6888-2:2021
	6. Enumeration of microorganisms -- Colony-count technique at 30 ⁰ C	ISO 4833-1:2013
	7. Enumeration of <i>Bacillus cereus</i>	ISO 7932:2004
	8. Enumeration of <i>Clostridium perfringens</i>	ISO 7937:2004
	9. Enumeration of Enterobacteriaceae	ISO 21528-2:2017
	10. Enumeration of <i>Escherichia coli</i>	ISO 16649-2:2001
	11. Enumeration of <i>Listeria monocytogenes</i>	ISO 11290-2:2017
	12. Enumeration of beta-glucuronidase-positive <i>Escherichia coli</i> (MPN technique)	ISO 16649-3:2015
7. Food and animal feeding stuffs with a _w >0,95	Enumeration of yeasts and moulds	ISO 21527-1:2008
8. Food and animal feeding stuffs with a _w ≤0,95	Enumeration of yeasts and moulds	ISO 21527-2:2008

Tested Materials/Products	Types of test/Properties measured	Applied methods/Techniques used
9. Human food products and environmental samples	Detection of <i>Listeria monocytogenes</i> with VIDAS	Validation certificate AFAQ/ AFNOR Bio 12/11-03/04
10. Human and animal food products and environmental samples (except stock farming environment)	Detection of <i>Salmonella</i> spp. with VIDAS	Validation Certificate AFAQ/AFNOR Bio 12/16-09/05
11. Animal faeces and environmental samples from the primary production stage	Detection of non-typhoidal - paratyphoid <i>Salmonella</i> spp.	ISO 6579-1 :2017
12. Products intended for human consumption, animal feeding & environmental samples in the area of food and feed production	Enumeration of Campylobacter spp	ISO 10272-2:2017
Sampling		
1. Water for human consumption	Determination of chemical and microbiological parameters	ISO 5667-1:2020 ISO 5667-3:2018 ISO 5667-5:2006 ISO 5667-14:2014 ISO 19458:2006
2. Samples from surfaces using contact plates and swabs	Horizontal methods for sampling techniques for microbiology tests	ISO 18593:2018

****Methods marked with (*) are in accordance with the method specification of Common Ministerial Decision Γ1 δΓΠ 67332/2017 (regulation EC 98/83 and its amendments) concerning the quality of drinking water.***

***** Methods marked with (**) are in accordance with the method specification of European Commission EC/333/2007 and its amendments EK/836/2011.***

1. American Public Health Association, American Water Works Association, Water Environment Federation, "Standard Methods for the Examination of Water and Wastewater", 22nd Edition, 2012
2. AOAC: Association of Analytical Communities

Site of assessment: **Permanent laboratory premises – 12 Tsamadou Str., Piraeus, Attiki, Greece**
Approved signatories: **A. Tsakalidis, A. Gagomirois, P. Drillia**

This scope of Accreditation replaces the previous one, dated 15.07.2021.

The Accreditation Certificate No. **16-6**, according to ELOT EN ISO/IEC 17025:2017, is valid until 12.03.2025.

Athens, 3rd of February 2022

Christos Nestoras
CEO of ESYD