



National Institute of Metrology (Thailand)

3/4-5 Moo 3, Klong 5, Klong Luang, Pathumthani, 12120, Thailand

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Item No.	Description	Range	Accuracy / Uncertainty	Price (THB)	Remark	Code
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Calibration Fee

Chemical Metrology and Biometry

1	Piston pipette	20 µL to 10 mL	0.04 µL	3,130 three point + 500 next point		12031-10201
		0.1 µL to 20 µL	0.04 µL	3,730 three point + 500 next point		12031-10202
2	Volumetric Flask	25 mL to 2000 mL	Class A	2,500/piece		12031-10203
3	Pipette	1 mL to 50 mL	Class A	2,500/piece		12031-10204
4	Burette	Up to 100 mL	Class A	2,500 two point + 500 next point		12031-10205
5	Pycnometer	1 mL to 500 mL	0.1% to 1%	2,500/piece		12031-10206
6	Potassium Dichromate Standard Solutions (Recalibrate)	20 to 100 mg/kg	0.003 A	7,500/set		12031-10301
7	Potassium Iodide Standard Solution (Recalibrate)	10 g/L	0.5 nm	6,500/set		12031-10302
8	Holmium Filter (Recalibrate)	200 nm to 700 nm	0.3 nm	5,650/piece		12031-10303
9	Didymium Filter (Recalibrate)	400 nm to 900 nm	0.3 nm	5,650/piece		12031-10304
10	Neodymium filter (Recalibration)	400 nm to 900 nm	0.3 nm	5,650/piece		12031-10307
11	Neutral Density Filter (Recalibrate)	400 nm to 700 nm	0.003 A	7,000/set		12031-10305
12	Recalibrate standard solution for stray light	10 g/L	0.12 nm	6,500/set		12031-10306
13	Assigned pH value for sample (secondary method)	3.99 - 4.02 pH	0.01 pH	2,500/sample		12031-10102
14	Assigned pH value for sample (secondary method)	6.85 - 6.88 pH	0.01 pH	2,500/sample		12031-10103
15	Assigned pH value for sample (primary method)	3.99 - 4.02 pH	0.008 pH	13,750/sample		12031-10104
16	Assigned pH value for sample (primary method)	6.85 - 6.88 pH	0.005 pH	13,750/sample		12031-10105



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17	Assigned pH value for sample (primary method)	9.16 - 9.20 pH	0.008 pH	13,750/sample		12032-10108
18	Assigned pH value for sample (secondary method)	1 - 12 pH	0.01 pH	2,500/sample		12031-10106
19	Assigned pH value for sample (primary method)	1 - 12 pH	0.008 pH	13,750/sample		12031-10107
20	pH meter with associated electrode	1 - 11 pH (-414.11 mV) to 414.11 mV	0.02 pH 0.06 mV	3,750/set		12031-10101
21	Assigned electrolytic conductivity value for sample (secondary method)	12.88 mS/cm	0.3% relative	11,000 /sample		12031-10404
22	Assigned electrolytic conductivity value for sample (secondary method)	1413 μ S/cm	0.3% relative	11,000 /sample		12031-10401
23	Assigned electrolytic conductivity value for sample (secondary method)	147 μ S/cm	0.5% relative	11,000 /sample		12031-10402
24	Oxygen Analyzer	1-30 cmol/mol	0.25-0.45 %relative	11,500/item	CIPM-MRA: 3-point calibration	12051-10101
25	Oxygen Detector	1-50 cmol/mol	1.0 %relative	3,000/item	CIPM-MRA: 1-point calibration	12050-10102
26	Carbon Dioxide Analyzer	1-15 cmol/mol	1.0 %relative	11,500/item	CIPM-MRA: 3-point calibration	12051-10201
27	Carbon Dioxide Detector	0.1-15 cmol/mol	1.0 %relative	3,000/item	CIPM-MRA: 1-point calibration	12050-10202
28	Methane Analyzer	1-15 cmol/mol	0.35 %relative	11,500/item	CIPM-MRA: 3-point calibration	12051-10301
29	Methane Detector	0.01-15 cmol/mol	1.0 %relative	3,000/item	CIPM-MRA: 1-point calibration	12050-10302
30	Carbon Monoxide Analyzer	5-100 μ mol/mol	0.65-0.84 %relative	11,750/item	CIPM-MRA: 3-point calibration	12051-10401
31	Carbon Monoxide Detector	0.01-15 cmol/mol	1.0 %relative	3,000/item	CIPM-MRA: 1-point calibration	12050-10402
32	Propane Detector	0.01-15 cmol/mol	1.0 %relative	3,000/item	1-point calibration	12050-10601



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RMs/CRMs

Chemical Metrology and Biometry

33	0.01% Brix Sucrose Standard Solution (TRM-S-5026)	0.01%	2.0% relative	3,700/ 15mL		12011-20226
	0.02% Brix Sucrose Standard Solution (TRM-S-5027)	0.02%	1.4% relative	3,700/ 15mL		12011-20227
	0.03% Brix Sucrose Standard Solution (TRM-S-5028)	0.03%	0.5% relative	3,700/ 15mL		12011-20228
	0.04% Brix Sucrose Standard Solution (TRM-S-5029)	0.04%	0.6% relative	3,700/ 15mL		12011-20229
	0.05% Brix Sucrose Standard Solution (TRM-S-5030)	0.05%	0.8% relative	3,700/ 15mL		12011-20230
	5% Brix Sucrose Standard Solution (TRM-S-5001)	5.00 %Brix, 1.34026 nD	0.04 %Brix, 0.00007 nD	3,600/15 mL		12012-20201
	10% Brix Sucrose Standard Solution (TRM-S-5002)	10.00 %Brix, 1.34782 nD	0.04 %Brix, 0.00008 nD	3,600/15 mL		12011-20202
	20% Brix Sucrose Standard Solution (TRM-S-5003)	20.00%Brix, 1.36384 nD	0.04 %Brix, 0.00008 nD	3,600/15 mL		12011-20203
	30% Brix Sucrose Standard Solution (TRM-S-5004)	30.00 %Brix, 1.38115 nD	0.04 %Brix, 0.00008 nD	3,600/15 mL		12011-20204
	40% Brix Sucrose Standard Solution (TRM-S-5031)	40.00% Brix, 1.39986 nD	0.002%Brix, 0.00007 nD	3,600/ 15mL		12011-20231
	50% Brix Sucrose Standard Solution (TRM-S-5005)	50.00%Brix, 1.42009 nD	0.04 %Brix, 0.00008 nD	3,600/15 mL		12011-20205
	60% Brix Sucrose Standard Solution (TRM-S-5006)	60.00 %Brix, 1.44193 nD	0.04 %Brix, 0.00009 nD	3,600/15 mL		12011-20206
34	Benzene in methanol (TRM-S-5007)	1,000 mg/L	1.4 % relative	4,750/8 mL		12011-20207
35	Ethylbenzene in methanol (TRM-S-5008)	1,000 mg/L	1.1 % relative	4,750/8 mL		12011-20208
36	Toluene in methanol (TRM-S-5009)	1,000 mg/L	1.4 % relative	4,750/8 mL		12011-20209
37	o-xylene in methanol (TRM-S-5010)	1,000 mg/L	2.2 % relative	4,750/8 mL		12011-20210
38	m-xylene in methanol (TRM-S-5011)	1,000 mg/L	1.0 % relative	4,750/8 mL		12011-20211
39	p-xylene in methanol (TRM-S-5012)	1,000 mg/L	1.3% relative	4,750/8 mL		12011-20212
40	Organochlorine Pesticide Mix set 1	100 mg/kg	3% relative	11,600/1.1 mL		12011-20213
41	Organochlorine Pesticide Mix set 2	100 mg/kg	2% relative	16,000/1.1 mL		12011-20221



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42	Organophosphate Pesticide Mix set 1	100 mg/kg	5% relative	7,700/1.1 mL		12011-20214
43	Organophosphate Pesticide Mix set 2	100 mg/kg	3% relative	13,300/1.1 mL		12011-20215
44	Organophosphate Pesticide Mix set 3	100 mg/kg	4% relative	14,500/1.1 mL		12011-20219
45	Organophosphate Pesticide Mix set 4	100 mg/kg	4% relative	11,000/1.1 mL		12011-20220
46	Organophosphate Pesticide Mix set 5	100 mg/kg	3% relative	12,100/1.1 mL		12011-20225
47	Acaricide Pesticide Mix set 1	100 mg/kg	3% relative	7,000/1.1 mL		12011-20216
48	Acaricide Pesticide Mix set 2	100 mg/kg	2 % relative	14,000/1.1 mL		12011-20224
49	Carbamate Pesticide Mix set 1	100 mg/kg	3% relative	8,100/1.1 mL		12011-20217
50	Pyrethroid Pesticide Mix set 1	100 mg/kg	2 % relative	11,000/1.1 mL		12011-20218
51	Pyrethroid Pesticide Mix set 2	100 mg/kg	3 % relative	10,000/1.1 mL		12011-20222
52	Insecticide Pesticide Mix set 1	100 mg/kg	2 % relative	10,000/1.1 mL		12011-20225
53	Total malachite green in shrimp (TRM-F-5001)	18.35 µg/kg	4.00 % relative	5,000/ bottle		12011-20601
54	Aflatoxins in peanut butter (TRM-F-5002)	2-10 ng/g	8-10% relative	4,500 /bottle	30 g/bottle	12011-20602
55	Total cholesterol in frozen human serum (TRM-C-5001)	2 .05 mg/g	6% relative	3,000 / vial		12011-20501
56	Clenbuterol in feed	71.9 µg/kg	5.43 % relative	2,850/bottle		12011-20901
57	Salbutamol in feed	79.5 µg/kg	14.21 % relative	2,850/bottle		12011-20902
58	Potassium Dichromate Solution	20, 40, 60, 80 and 100 mg/kg (each set choose from the concentrations above)	0.01 A	43,000/set	Set 6 : 5 concentrations (TRM-S-2009e)	12031-20201
				38,000/set	Set 5 : 4 concentrations (TRM-S-2009d)	12031-20202
				32,800/set	Set 4 : 3 concentrations (TRM-S-2009c)	12031-20203
				27,700/set	Set 3 : 2 concentrations (TRM-S-2009b)	12031-20204
				22,600/set	Set 2 : 1 concentration (TRM-S-2009a)	12031-20205



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59	Potassium Iodide Standard Solution (TRM-S-2010)	10 g/L	0.5 nm	20,000/set		12031-20206
60	Zinc standard solution (TRM-S-2011)	10,000 ppm	1% relative	1,250/100 ml		12031-20301
61	Cadmium standard solution (TRM-S-2012)	10,000 ppm	1% relative	1,250/100 ml		12031-20302
62	Chloride standard solution (TRM-S-2013)	100 ppm	1% relative	1,250/100 ml		12031-20401
63	Sodium standard solution (TRM-S-2014)	100 ppm	1% relative	1,250/100 ml		12031-20501
64	Arsenic standard solution (TRM-S-2015)	1000 ppm	0.2% relative	2,000/100 ml		12031-20303
65	Elements in Glutinous Rice Powder (TRM-F-4001)	Cd 0.69 mg/kg	0.06 mg/kg	4,000/ bottle	30 g/bottle	12022-20001
		Cu 1.5 mg/kg	0.1 mg/kg			
		Mn 7.8 mg/kg	1.0 mg/kg			
		Zn 21.2 mg/kg	1.0 mg/kg			
66	Trace and Essential Elements in Prawn (TRM-F-4002)	Cd 2.05 mg/kg	0.11 mg/kg	8,800/ bottle	5 g/bottle	12022-20002
		Cu 49 mg/kg	2 mg/kg			
		Pb 1.8 mg/kg	0.1 mg/kg			
		Zn 81 mg/kg	4 mg/kg			
67	Elements in Acrylonitrile Butadiene Styrene (ABS) Plastic, Low Levels (TRM-M-4001)	Cd 10.1 mg/kg	0.5 mg/kg	8,700/ bottle	30 g/bottle	12022-20003
		Cr 21 mg/kg	1 mg/kg			
		Pb 82 mg/kg	4 mg/kg			
		Hg 102 mg/kg	7 mg/kg			
68	Elements in Soil (TRM-E-4001)	Cd 0.85 mg/kg	0.10 mg/kg	8,100/bottle	30 g/bottle	12022-20004
		Cu 27.7 mg/kg	2.1 mg/kg			
		Ni 43.7 mg/kg	2.8 mg/kg			
		Pb 29.5 mg/kg	1.9 mg/kg			
		Zn 69.6 mg/kg	7.8 mg/kg			
69	Elements in Acrylonitrile Butadiene Styrene (ABS) Plastic, High Levels (TRM-M-4002)	Cd 102 mg/kg	4 mg/kg	8,700/bottle	30 g/bottle	12022-20005
		Cr 172 mg/kg	7 mg/kg			
		Pb 837 mg/kg	36 mg/kg			
		Hg 1025 mg/kg	61 mg/kg			



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70	Elements in Human Serum (TRM-C-4001)	Ca 92.9 mg/kg	6.3 mg/kg	2,800/bottle	4 mL/bottle	12022-20006
		K 168 mg/kg	11 mg/kg			
		Mg 21.8 mg/kg	1.3 mg/kg			
71	Arsenic in White Rice Flour (TRM-F-4003)	Total As 100 µg/kg	7 µg/kg	2,700/bottle	25 g/bottle	12022-20007
72	Trace Elements in Drinking Water (TRM-E-4002)	Cd 0.0050 mg/kg	0.0003 mg/kg	3,500/bottle	100 mL/bottle	12022-20008
		Cu 0.504 mg/kg	0.011 mg/kg			
		Pb 0.061 mg/kg	0.004 mg/kg			
		Zn 0.632 mg/kg	0.018 mg/kg			
73	Mercury in Drinking Water (TRM-E-4003)	Hg 528 ng/kg	41 ng/kg	1,700/bottle	10 mL/bottle	12022-20009
74	Secondary pH standard	1.08 - 1.12 pH	0.02 pH	1,850/set (5 x 100mL)	0.01 N Hydrochloric acid (TRM-S-2001)	12031-20107
		1.66 - 1.70 pH	0.02 pH		Tetroxalate pH standard (TRM-S-2002)	12031-20106
		3.99 - 4.02 pH	0.01 pH		Phthalate pH standard (TRM-S-2003)	12031-20101
		6.85 - 6.88 pH	0.01 pH		Phosphate pH standard (TRM-S-2004)	12031-20102
		6.99 - 7.03 pH	0.01 pH		Phosphate pH standard (TRM-S-2005)	12031-20104
		9.17 - 9.20 pH	0.01 pH		Tetraborate pH standard (TRM-S-2006)	12031-20103
		9.99 - 10.02 pH	0.10 pH		Carbonate pH standard (TRM-S-2007)	12031-20105
		11.70 - 11.74 pH	0.02 pH		Alkaline phosphate pH standard (TRM-S-2008)	12031-20108
		1.08-1.12	0.02 pH	450/100 mL	0.01N Hydrochloric acid (TRM-S-2001)	12031 - 20112
		1.66-1.70	0.02 pH		Tetroxalate pH standard (TRM-S-2002)	12031 - 20113
		3.99-4.02	0.01 pH		Phthalate pH standard (TRM-S-2003)	12031 - 20114
		6.85-6.88	0.01 pH		Phosphate pH standard (TRM-S-2004)	12031 - 20115
		6.99-7.03	0.01 pH		Phosphate pH standard (TRM-S-2005)	12031 - 20116



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	Secondary pH standard	9.17-9.20	0.01 pH	450/100 mL	Tetraborate pH standard (TRM-S-2006)	12031 - 20117
		9.99-10.02	0.10 pH		Carbonate pH standard (TRM-S-2007)	12031 - 20118
		11.70-11.74	0.02 pH		Alkaline phosphate pH standard (TRM-S-2008)	12031 - 20119
75	Secondary electrolytic conductivity solution (0.1 mol/l KCl) (TRM-S-2018)	12.88 mS/cm	0.3% relative	8,500/250 mL		12031-20601
76	Secondary electrolytic conductivity solution (0.01mol/l KCl) (TRM-S-2019)	1413 μ S/cm	0.3% relative	5,600 / 250 ml		12031-20602
77	Secondary electrolytic conductivity solution (0.001mol/l KCl) (TRM-S-2017)	147 μ S/cm	0.5% relative	5,600 / 250 ml		12031-20603
78	pH of ethanol (TRM-S-2016)	6.0 - 8.0 pH	0.5 pH	2,500 / bottle		12031-20701
79	(Primary) Phthalate buffer solution	3.99 - 4.02 pH	0.008 pH	15,000/500 mL	(TRM-S-2020)	12031-20109
80	(Primary) Phosphate buffer solution	6.85 - 6.88 pH	0.005 pH	15,000/500 mL	(TRM-S-2021)	12031-20110
81	(Primary) Borate buffer solution	9.16 - 9.20 pH	0.008 pH	15,000/500 mL	(TRM-S-2022)	12031-20111
82	Platinum electrode for pH measurement			25,000 /piece (1,000 USD)	For differential cell and Harned cell method	12031-20801
83	Oxygen in Nitrogen (TRM-E-3010)	1-30 cmol/mol	0.25-0.45%relative	29,000/refill per 1 cylinder	Cylinder volume: 9.5 Liters, Filling Pressure :100 bar	12051-20101
		1-30 cmol/mol	0.25-0.45%relative	49,000/Al cylinder	Cylinder volume: 9.5 Liters, Filling Pressure :100 bar	12051-20102
84	Oxygen in Nitrogen (TRM-E-3011)	2-30 cmol/mol	0.5%relative	18,000/refill per 1 cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12051-20103
		2-30 cmol/mol	0.5%relative	25,000/cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12051-20104
		2-30 cmol/mol	0.5%relative	30,000/refill per 2 cylinders	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12051-20105
		2-30 cmol/mol	0.5%relative	44,000/ 2 cylinders	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12051-20106
		2-30 cmol/mol	0.5%relative	36,000/refill per 3 cylinders	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12051-20107
		2-30 cmol/mol	0.5%relative	57,000/ 3 cylinders	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12051-20108



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85	Carbon Dioxide in Nitrogen (TRM-E-3020)	1-15 cmol/mol	1.0%relative	25,500/refill per 1 cylinder	Cylinder volume: 9.5 Liters, Filling Pressure :100 bar	12051-20201
		1-15 cmol/mol	1.0%relative	45,500/AI cylinder	Cylinder volume: 9.5 Liters, Filling Pressure :100 bar	12051-20202
86	Carbon Dioxide in Nitrogen (TRM-E-3021)	0.5-20 cmol/mol	1.0 %relative	16,900 refill per 1 cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12050-20203
		0.5-20 cmol/mol	1.0 %relative	23,900/ cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12052-20204
87	Methane in Nitrogen (TRM-E-3030)	1-15 cmol/mol	0.35%relative	27,500/refill per 1 cylinder	Cylinder volume: 9.5 Liters, Filling Pressure :100 bar	12051-20301
		1-15 cmol/mol	0.35%relative	47,500/AI cylinder	Cylinder volume: 9.5 Liters, Filling Pressure :100 bar	12051-20302
88	Methane in Nitrogen (TRM-E-3031)	1-10 cmol/mol	0.7%relative	20,000/refill per 1 cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12051-20303
		1-10 cmol/mol	0.7%relative	27,000/cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12051-20304
89	Methane in Nitrogen (TRM-E-3033)	100-1000 µmol/mol	1.0 %relative	23,800 refill per 1 cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12050-20307
		100-1000 µmol/mol	1.0 %relative	33,200/ cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12050-20308
90	Methane in Air (TRM-E-3032)	0.5-10 cmol/mol	1.0 %relative	20,000 refill per 1 cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12050-20305
		0.5-10 cmol/mol	1.0 %relative	27,000/ cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12050-20306
91	Sulfur Dioxide in Nitrogen (TRM-E-3050)	500 - 2,000 µmol/mol	0.5% relative	23,000/refill per cylinder	Cylinder volume : 10 Liters Filling Pressure : 100 bar	12050-20501
		500 - 2,000 µmol/mol	0.5% relative	33,000/ AI cylinder	Cylinder volume : 10 Liters Filling Pressure : 100 bar	12050-20502
92	Propane in Nitrogen (TRM-E-3061)	200-5,000 µmol/mol	0.5%relative	27,900/refill per 1 cylinder	Cylinder volume: 10 Liters, Filling Pressure :100 bar	12050-20601
		200-5,000 µmol/mol	0.5%relative	37,200/ AI cylinder	Cylinder volume: 10 Liters, Filling Pressure :100 bar	12050-20602



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93	Propane in Nitrogen (TRM-E-3062)	0.5-10 cmol/mol	1.0 %relative	20,500 refill per 1 cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12050-20603
		0.5-10 cmol/mol	1.0 %relative	27,500/ cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12050-20604
94	Propane in Air (TRM-E-3063)	0.5-10 cmol/mol	1.0 %relative	22,400 refill per 1 cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12050-20605
		0.5-10 cmol/mol	1.0 %relative	29,400/ cylinder	Cylinder volume: 10 Liters, Filling Pressure :100-135 bar	12050-20606
95	Nitrogen Monoxide in Nitrogen (TRM-E-3070)	1,000 - 10,000 µmol/mol	1.0% relative	23,000/refill per cylinder	Cylinder volume : 10 Liters Filling Pressure : 100 bar	12050-20701
		1,000 - 10,000 µmol/mol	1.0% relative	33,000/ Al cylinder	Cylinder volume : 10 Liters Filling Pressure : 100 bar	12050-20702

Analysis Fee

Chemical Metrology and Biometry

96	Malachite green in seafood by ID-LC-MS/MS	0.5 - 20 µg/kg	9.0 - 9.5 % relative	46,250/sample	Capability reference: CCQM-K85 (2010)	12011-60601
97	Leuco-malachite green in seafood by ID-LC-MS/MS	0.5 - 20 µg/kg	8.0 - 8.5 % relative	46,250/sample	Capability reference: CCQM-K85 (2010)	12011-60602
98	Total malachite green in seafood by ID-LC-MS/MS	1.0 - 40 µg/kg	6.2 - 7.0 % relative	46,250/sample	Capability reference: CCQM-K85 (2010)	12011-60603
99	Melamine in milk powder and dairy products by ID-LC-MS/MS	0.1 - 5.0 mg/kg	5.5 - 6.5 % relative	45,000/sample	Capability reference: CCQM-K103 (2012)	12011-60604
100	Chloramphenicol in food by ID-LC-MS/MS	0.1 - 10.0 µg/kg	7.0 - 8.0 % relative	40,000/sample	Capability reference: CCQM-K81 (2009)	12011-60605
101	Endosulfan (II) in fruits and vegetables by ID-GC/MS	100 - 1000 µg/kg	4.5 - 5.5 % relative	26,880/sample	Capability reference: CCQM-P136 (2012)	12011-60606
102	Endosulfan sulfate in fruits and vegetables by ID-GC/MS	100 - 1000 µg/kg	4.5 - 5.5 % relative	27,500/sample	Capability reference: CCQM-P136 (2012)	12011-60607
103	b-agonists in meat by ID-LC-MS/MS	1 - 50 µg/kg	5.0 - 6.0 % relative	45,400/sample	Capability reference: APMP.QM-S6 (2013)	12011-60608
104	Total cholesterol in frozen human serum by ID-LC-MS/MS	0.01-5.00 mg/g	5-6% relative	38,150/sample	Capability reference: CCQM-K6.2 (2013)	12011-60501
105	Creatinine in human serum by ID-LC-MS/MS (Exact Matching)	0.1- 5.0 mg/g	3-4 % relative	39,500/Value		12011-60503



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Item No.	Description	Range	Accuracy / Uncertainty	Price (THB)	Remark	Code
106	Clenbuterol in feed by ID-LC-MS/MS (Calibration curve)	10-1000 ng/g	8-10% relative	15,500/Value		12011-60903
107	Sulbutamol in feed by ID-LC-MS/MS (Calibration curve)	10-1000 ng/g	8-10% relative	16,000/Value		12011-60904
108	Polarization (Pol) and optical rotation (OR) of sucrose solution at 546 nm, 200 mm cell length	Pol: 0-100 °Z, OR: 0°-40°	0.3 - 0.6 °Z 1°- 3°	15,000/Value		12011-60202
109	Polarization (Pol) and optical rotation (OR) of sucrose solution at 589 nm, 200 mm cell length	Pol: 0-100 °Z, OR: 0°-34°	0.3 - 0.6 °Z 1°- 3°	15,000/Value		12011-60203
110	Ethanol in food	0.01-30 mg/g	2 - 6% relative	10,000/Value		12011-60613
111	Benz(a)anthracene (BaA) by ID-LC-MS/MS (Calibration curve)	10 - 100 ng/g	9-10 % relative	24,000/Value	Minimum service requirement ≥ 3 Values	12011-60614
112	Benzo(a)pyrene (BaP) by ID-LC-MS/MS (Calibration curve)	10 - 100 ng/g	9-10 % relative	22,000/Value	Minimum service requirement ≥ 3 Values	12011-60615
113	Malachite green in seafood by ID-LC-MS/MS (Calibration curve)	0.5 - 20 ng/g	10-11 % relative	17,500/Value		12011-60616
114	Leuco-malachite green in seafood by ID-LC-MS/MS (Calibration curve)	0.5 - 20 ng/g	10-11 % relative	16,000/Value		12011-60617
115	Total malachite green in seafood by ID-LC-MS/MS (Calibration curve)	1.0 - 40 ng/g	7.0-7.5 % relative	18,000/Value		12011-60618
116	One type aflatoxin in nuts and seeds	2-10 ng/g	6-8 %relative	25,000/ 1 type	type of aflatoxin: AFB1, AFB2, AFG1 and AFG2	12011-60609
	Two types aflatoxin in nuts and seeds	2-10 ng/g	6-8 %relative	30,000/ 2 types		12011-60610
	three types aflatoxin in nuts and seeds	2-10 ng/g	6-8 %relative	35,000/ 3 types		12011 -60611
	Four types aflatoxin in nuts and seeds	2-10 ng/g	6-8 %relative	40,000/ 4 types		12011-60612
117	Purity assessment of aldrin	GC, purity>95% TGA inorganic residue as specification KFT, water as specification GC-HS, organic solvent as specification	As specification	48,250/sample	Capability reference: CCQM-K55.b (2010)	12011-60101



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118	Purity assessment of L-valine	HPLC, purity>95% TGA inorganic residue as specification KFT, water as specification GC-HS, organic solvent as specification	As specification	58,130/sample	Capability reference: CCQM-K55.c (2012)	12011-60102
119	Purity assessment of Avermectin	HPLC, purity>92% TGA inorganic residue as specification KFT, water as specification GC-HS, organic solvent as specification	As specification	58,300/sample	Capability reference: CCQM-K104 (2013)	12011-60103
120	Assigned Brix and Refractive Index value for sample	5.00 - 60.00 % Brix, 1.34026 - 1.44193 nD	0.04 % Brix, 0.00008 nD	3,880/sample		12011-60201
121	Glucose in human serum by ID-LC-MS/MS	0.12- 4.5 mg/g	3-4 %relative	33,000/sample	Capability reference: CCQM-K104 (2013)	12011-60502
122	Clenbuterol in feed	10-1000 µg/kg	5-6%relative	43,100/1 assigned value		12011-60901
123	Salbuterol in feed	10-1000 µg/kg	5-6% relative	43,600/2 assigned value		12011-60902
124	Arsenic (total) in plant materials by standard addition	As(total): 0.5 - 5.0 mg/kg	7.0 - 7.5 % relative	30,250/sample	Capability reference: CCQM-K89(2011)	12022-60101
125	Arsenic (total) in seafood by standard addition	As(total): 10 - 100 mg/kg	4.5 - 5.5 % relative	30,250 /sample	Capability reference: APMP.QM-S5(2012)	12022-60102
126	Arsenic (total) in cereal and cereal products by standard addition	As: 0.005 - 0.05 mg/kg	6.5 - 7.5% relative	60,207/sample	Capability reference: CCQM-K108 (2014)	12022-60103
127	Arsenic (total) in fresh water by standard addition	As(total): 0.005 - 1.000 mg/kg	3.5 - 4.0% relative	24,700 /sample		12022-60104
128	Arsenic (total) in cosmetic cream by standard addition	As(total): 1 - 10 mg/kg	4.5 - 5.0 % relative	25,100 /sample	Capability reference: CCQM-K106 (2014)	12022-60109
129	Cadmium in plant materials by ICP-IDMS	Cd: 0.1 - 10.0 mg/kg	2.5 - 3.0 % relative	34,130 /sample	Capability reference: CCQM-K89(2011)	12022-60301
130	Cadmium in cereal and cereal products by ICP-IDMS	Cd: 0.1-1.0 mg/kg	3.5 - 4.0 % relative	34,130 /sample	Capability reference: APMP.QM-S3 (2008)	12022-60303
131	Cadmium in fresh water by ICP-IDMS	Cd: 1-5 ug/kg	4.5 - 5.0 % relative	31,380 /sample	Capability reference: SIM-QM-S2 (2010)	12022-60304



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132	Cadmium in plastic by ICP-IDMS	Cd: 20-80 mg/kg	1.5 - 2.0 % relative	33,750 /sample	Capability reference: CCQM-P106 (2008)	12022-60305
133	Cadmium in cereal and cereal products by standard addition	Cd: 0.1 - 0.5 mg/kg	4.6 - 5.0% relative	24,700 /sample	Capability reference: CCQM-K108 (2014)	12022-61403
134	Calcium in plant materials by ICP-IDMS	Ca: 5 - 50 mg/g	4.0 - 4.5 % relative	34,130 /sample	Capability reference: CCQM-K89(2011)	12022-60201
135	Calcium in cereal and cereal products by ICP-IDMS	Ca: 1000-2000 mg/kg	3.0 - 3.5 % relative	34,000 /sample	Capability reference: CCQM-K56 (2007)	12022-60203
136	Calcium in fresh water by ICP-IDMS	Ca: 2 - 25 mg/kg	3.0 - 3.5 % relative	31,380 /sample	Capability reference: SIM-QM-S2 (2010)	12022-60204
137	Chromium in fresh water by ICP-IDMS	Cr: 2 - 20 µg/kg	6.5 - 7.0% relative	28,300 /sample	Capability reference: CCQM-K124 (2016)	12022-60404
138	Chromium in plastic by ICP-IDMS	Cr: 100-400 mg/kg	2.5 - 3.0 % relative	34,000 /sample	Capability reference: CCQM-P106 (2008)	12022-60405
139	Copper in cereal and cereal products by ICP-IDMS	Cu: 5-20 mg/kg	2.0 - 2.5 % relative	34,380 /sample	Capability reference: CCQM-K56 (2007)	12022-60503
140	Copper in bio Fuel by ICP-IDMS	Cu : 0.05 - 1.00 mg/kg	3.0- 4.0 % relative	26,000 /sample	Capability reference: CCQM-K100 (2012)	12022-60506
141	Copper in fresh water by ICP-IDMS	Cu: 0.05 - 20 mg/kg	3.0 - 4.0% relative	28,100 /sample		12022-60504
142	Iron in seafood by ICP-IDMS	Fe: 50 - 500 mg/kg	3.5 - 4.5 % relative	34,130 /sample	Capability reference: APMP.QM-S5 (2012)	12022-60602
143	Lead in plant materials by ICP-IDMS	Pb: 0.1 - 10.0 mg/kg	2.5 - 3.0 % relative	34,000 /sample	Capability reference: CCQM-K89(2011)	12022-61001
144	Lead in plastic by ICP-IDMS	Pb: 50-600 mg/kg	1.5 - 2.0 % relative	34,000 /sample	Capability reference: CCQM-P106 (2008)	12022-61005
145	Lead in fresh water by ICP-IDMS	Pb: 5-30 ug/kg	2.5 - 3.0 % relative	31,380/sample	Capability reference: SIM-QM-S2 (2010)	12022-61004
146	Lead in cosmetic cream by ICP-IDMS	Pb: 5 - 10 mg/kg	2.5 - 3.0% relative	27,700 /sample	Capability reference: CCQM-K106 (2014)	12022-61009
147	Nickel in fresh water by ICP-IDMS	Ni: 50-80 ug/kg	3.0 - 3.5 % relative	31,250 /sample	Capability reference: SIM-QM-S2 (2010)	12022-60904
148	Magnesium in biological fluids by ICP-IDMS	Mg: 5 - 50 mg/kg	0.5 - 1.5% relative	68,815/sample	Capability reference: CCQM-K107 (2014)	12022-60808
149	Mercury in fresh water by external calibration CV-AAS	Hg: 0.1 - 4.0 µg/kg	5.0 - 10.0% relative	17,250 /sample		12022-61204
150	Mercury in cosmetic cream by ICP-IDMS	Hg: 0.1 - 2 mg/kg	4.0 - 4.5% relative	28,500 /sample	Capability reference: CCQM-K106 (2014)	12022-61209
151	Mercury speciation (Methylmercury as Hg) in seafood by external calibration HPLC-ICPMS	Hg: 0.5 - 20 mg/ kg	6.0 - 10.0% relative	10,300 /sample		12022-61302
152	Potassium in biological fluids by ICP-IDMS	K: 50 - 500 mg/kg	3.5 - 4.5% relative	68,815/sample	Capability reference: CCQM-K107 (2014)	12022-60708
153	Zinc in plant materials by ICP-IDMS	Zn: 10 - 100 mg/kg	1.0 - 1.5 % relative	34,880 /sample	Capability reference: CCQM-K89(2011)	12022-61101



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154	Zinc in cereal and cereal products by ICP-IDMS	Zn: 10-80 mg/kg	3.0 - 3.5 % relative	34,880 /sample	Capability reference: CCQM-K56 (2007)	12022-61103
155	Zinc in meat by ICP-IDMS	Zn: 70-300 mg/kg	4.5 - 5.0 % relative	34,130 /sample	Capability reference: CCQM-P85 (2006)	12022-61107
156	Zinc in seafood by ICP-IDMS	Zn: 10 - 100 mg/kg	4.5 - 5.5 % relative	35,000 /sample	Capability reference: APMP.QM-S5 (2012)	12022-61102
157	Zinc in fresh water by ICP-IDMS	Zn: 0.05 - 1.00 mg/kg	2.0 - 2.5% relative	28,100 /sample		12022-61104
158	Quantification of genomic DNA fragment extracted from maize powder	As specification	As specification	3,750/sample for quality + 12,500/gene for quantity		12041-60101
159	Detection of the deoxyribonucleic acid (DNA) sequence of the pork using 3500 genetic analyzer			6,000/sample	for quality measurement (checking base pair)	12042-60101
160	The absolute quantification of gene event GT73/RT73 from genetically modified rapeseed by digital PCR	1.370-2.466 %copy number ratio	0.110-0.197 %copy number ratio	22,500/sample		12042-60102
161	The quantification of DP-Ø73496-4 event rapeseed powder using Real-time PCR	0.059 - 0.125 %copy number ratio	0.021-0.045 %copy number ratio	12,250/sample		12042-60103
162	Relative quantification of biomarker for Trefoil Factor 1 (TFF1) gene in breast cancer by real-time PCR	2.000-25.000 copy number ratio	0.742-9.283 copy number ratio	13,700/sample		12042-60104
163	Oxygen in Nitrogen	5-30 cmol/mol	0.25-0.45%relative	11,500/cylinder	CIPM-MRA	12051-60101
164	Carbon Dioxide in Nitrogen	1-15 cmol/mol	1.0%relative	11,500/cylinder	CIPM-MRA	12053-60201
		1-150 mmol/mol	0.5%relative	11,500/cylinder		12051-60202
165	Methane in Nitrogen	1-150 mmol/mol	0.35%relative	11,500/cylinder	CIPM-MRA	12052-60301
		200-1,000 µmol/mol	0.7%relative	14,100/cylinder		12050-60302
166	Carbon Monoxide in Nitrogen	5-100 µmol/mol	0.65-0.84%relative	11,750/cylinder	CIPM-MRA	12051-60401
		20-1000 µmol/mol	0.5 %relative	16,800/cylinder		12050-60402
		1-10 mmol/mol	0.5 %relative	18,000/cylinder		12050-60403
		1-15 cmol/mol	0.5 %relative	20,500/cylinder		12050-60404
167	Sulfur Dioxide in Nitrogen	50-500 µmol/mol	1.2%relative	13,500/cylinder		12051-60501
		500-2,000 µmol/mol	0.5%relative	14,500/cylinder		12050-60502
168	Propane in Nitrogen	1-10 cmol/mol	0.4%relative	14,500/cylinder		12050-60601
		200-5,000 µmol/mol	0.5%relative	17,400/cylinder		12050-60602
		20-200 µmol/mol	1.0%relative	18,000/cylinder		12050-60603

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169	Nitrogen Monoxide in Nitrogen	1-10 mmol/mol	0.6%relative	14,500/cylinder		12050-60701
		100 - 1,000 μ mol/mol	1.0% relative	14,500/cylinder		12050-60702