



Process and Environment Analytical Service Center

**Process and Environment Analytical Service Center** was established to provide chemical, physical and microbiological analyses to serve the needs of industrial, academic, and governmental customers. Our objective is to provide solutions and services that are fast, accurate, and reliable, using the latest analytical methods and procedures that are accepted as international standards.



Pilot Plant Development & Training Institute

King Mongkut's University of Technology  
Thonburi

## Services provided

### Analytical Services

- Water and wastewater analysis
- Food and process analysis
- Microbiological analysis
- Chemical and physical process analysis

### Consultation Services

- Analytical method
- Analytical equipment

### Seminar and Training Services

- Analytical method
- Analytical equipment

### Contact:

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Process and Environment Analytical Service Center

มหาวิทยาลัยเทคโนโลยีพระจอมเกล้าธนบุรี

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เขตบางขุนเทียน กรุงเทพฯ 10140

โทร (02) 470-9747, (02) 470-9754

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## Analytical Equipment

1. CHN Analyzer
2. Oxygen Analyzer
3. Sulfur Analyzer
4. Bomb Calorimeter
5. GF-AAS = Graphite furnace Atomic Absorption Spectrophotometer
6. UV – VIS Spectrophotometer
7. Oil & Fat Analyzer
8. Protein Analyzer (MicroKjeldahl)
9. Freeze Dryer
10. Water & Wastewater Analyzer

## Range of Services

1. Water & Wastewater Testing
  - 1.1 Water Chemistry
  - 1.2 Water Microbiology
2. Food & Microbiological Analysis
  - 2.1 Food Nutritional Labeling, Proximate Analysis, Vitamins, Minerals, etc.
  - 2.2 Food Chemistry
  - 2.3 Physical Analysis
  - 2.4 Microbiological Analysis
3. Petrochemical & Petroleum Products Analysis.
4. Consumer Products Analysis.
5. Animal Feed Analysis.
6. Cosmetic Analysis.
7. Others.

### Remark

Accredited Laboratory as ISO/IEC Guide 25:1990 At least 9 cans for a sample

AOAC = Association of Official Analytical Chemists (1995)

APHA = American Public Health Association (1992)

AWWA = American Water Works Association (1995)

Standard Method of Water and Wastewater Analysis (1998)

ASTM = American Society for Testing and Materials.

FDA-BAM = Food and Drug Administration – Bacteriological Analytical Manual (AOAC International) (1998)

TIS = Thai Industrial Standards (มท.)

ICMSF = The International Commission on Microbiological Specifications for Food

of the International Association of Microbiological Societies (1978)

BSI = British Standards Institution 5763 (1994)

VAK B and LITSHITZ A 1981

PARAMETER	METHOD	PRICE
<b>MATERIAL ANALYSIS</b>		
Moisture	<sup>6</sup> ASTM	300
Ash	ASTM	500
Volatile Matter	ASTM	400
Fixed Carbon (by calculate)	ASTM	1,200
Higher Heating Value	ASTM	800
Lower Heating Value *		*
Proximate Analysis (Moisture, Ash, Volatile Matter, Fixed Carbon)	ASTM	1,700
Ultimate Analysis	ASTM	
- C, H, N		3,500
- Oxygen		2,000
- Sulfur		1,800
Particle size distribution	ASTM	2,500
- Particle size		
- mean particle diameter		
- Effective size		
- Uniformity coefficient		
Sieve Analysis	ASTM	1,000
<b>FOOD AND PROCESS ANALYSIS</b>		
<b>PHYSICAL</b>		
Moisture	<sup>2</sup> AOAC	300
Colour	AOAC	300
Density	AOAC	300
Odour	AOAC	200
PH	AOAC	200
Specific Gravity	AOAC	300
Taste	AOAC	300
Temperature	AOAC	100
Dry Weight	AOAC	300
Drying Rate	AOAC	500
Water Solution	AOAC	400
Hot Water Extract	AOAC	500
<b>CHEMICAL</b>		
Acidity (Citric Acid)	AOAC	250
Alcohol	AOAC	700
Amylose	AOAC	500
Ascorbic Acid (Vitamin C)	AOAC	450
% Brix	AOAC	200
Carbohydrate	AOAC	2,200
Carotenoids (Vitamin A)	AOAC	1,000
Chlorophyll A	AOAC	700
Limolin	<sup>12</sup> VAK B and LITSHITZ A 1981.	800
Real Extract	AOAC	500
Recoverable Oil	AOAC	600
Reducing Sugar	AOAC	400
Starch	AOAC	700
Total Dietary Fiber	AOAC	2,000
Total Protein	AOAC	600
Total Lipid / Fat	AOAC	600
Total Sugar	AOAC	500

PARAMETER	METHOD	PRICE
<b>MICROBIOLOGICAL ANALYSIS</b>		
<b><sup>1</sup>HIGH AND LOW ACID CANNED FOOD</b>		
Aciduric spoilage	<sup>8</sup> TIS 335 Part 1	800
Coliform	TIS 335 Part 1	500
Flat sour producing	TIS 335 Part 1	700
- Mesophilic bacteria		
- Thermophilic bacteria		
Total Plate count (TVC)	TIS 335 Part 1	400
Yeast/Mold	TIS 335 Part 1	600
<i>Salmonella</i>	TIS 335 Part 1	600
<i>Staphylococcus</i>	TIS 335 Part 1	1,000
<i>Sulfide spoilage</i>	TIS 335 Part 1	600
Thermophilic anaerobe	TIS 335 Part 1	600
<b>GENERAL MICROBIOLOGICAL</b>		
Total Plate Count (TVC)	<sup>9</sup> ICMSF	400
Yeast/Mold	<sup>3</sup> APHA	500
Coliform	<sup>7</sup> FDA-BAM	500
E. coli	FDA-BAM	500
Fecal coliform	FDA-BAM	500
Fecal <i>Streptococcus</i>	<sup>5</sup> Std.Method, <sup>7</sup> APHA, <sup>4</sup> AWWA 1998	500
<i>Staphylococcus aureus</i>	FDA-BAM	1,000
<i>Bacillus cereus</i>	<sup>10</sup> BSI	600
<i>Clostridium perfringens</i>	FDA-BAM	700
<i>Salmonella sp.</i>	FDA-BAM	600
<i>Vibrio cholerae</i>	FDA-BAM	700
<i>Vibrio parahaemolyticus</i>	FDA-BAM	700
<i>Streptococcus</i>	TIS 335 Part 1	800
Shigella	FDA-BAM	1,000
Incubation test	TIS 335 Part 1	400
Sterility Testing	TIS 335 Part 1	1,200
<b>ENVIRONMENTAL ANALYSIS</b>		
<b>CHEMICAL</b>		
pH	Std. Method, APHA, AWWA 1998	100
Acidity	Std. Method, APHA, AWWA 1998	200
Alkalinity	Std. Method, APHA, AWWA 1998	200
Total Volatile Acid (TVA)	Std. Method, APHA, AWWA 1998	250
Ammonia Nitrogen	Std. Method, APHA, AWWA 1998	450
BOD <sub>5</sub> **	Std. Method, APHA, AWWA 1998	450
COD	Std. Method, APHA, AWWA 1998	500
Nitrite	Std. Method, APHA, AWWA 1998	500
Nitrate	Std. Method, APHA, AWWA 1998	500
Magnesium	Std. Method, APHA, AWWA 1998	500
Oil/Grease	Std. Method, APHA, AWWA 1998	600
Organic Nitrogen	Std. Method, APHA, AWWA 1998	500
Total Nitrogen (TKN)	Std. Method, APHA, AWWA 1998	600
Calcium hardness	Std. Method, APHA, AWWA 1998	400
Chloride	Std. Method, APHA, AWWA 1998	400
Chlorine (Residual Chlorine)	Std. Method, APHA, AWWA 1998	400
Dissolved Oxygen (DO)	Std. Method, APHA, AWWA 1998	250
Hardness (Total Ca, Mg)	Std. Method, APHA, AWWA 1998	400
Ortho Phosphate	Std. Method, APHA, AWWA 1998	400
Total Phosphate	Std. Method, APHA, AWWA 1998	500

PARAMETER	METHOD	PRICE
Sulfate (SO <sub>4</sub> <sup>2-</sup> )	Std. Method, APHA, AWWA 1998	400
Sulfite (SO <sub>3</sub> <sup>-</sup> )	Std. Method, APHA, AWWA 1998	400
<b>PHYSICAL</b>		
Turbidity	Std. Method, APHA, AWWA 1998	200
Conductivity	Std. Method, APHA, AWWA 1998	200
Total Solids	Std. Method, APHA, AWWA 1998	250
Total Dissolved Solids	Std. Method, APHA, AWWA 1998	250
Suspended Solids	Std. Method, APHA, AWWA 1998	250
MLSS	Std. Method, APHA, AWWA 1998	400
Total Volatile Solids	Std. Method, APHA, AWWA 1998	250
Total Fixed Solids	Std. Method, APHA, AWWA 1998	250
Settleable Solids	Std. Method, APHA, AWWA 1998	250
Volatiled Suspended Solids	Std. Method, APHA, AWWA 1998	250
Sludge Volume Index (SVI)	Std. Method, APHA, AWWA 1998	300
Temperature	Std. Method, APHA, AWWA 1998	100
<b>HEAVY METALS AND TOXIC SUBSTANCES</b>		
Aluminium, Al	GF-AAS	700
Arsenic, As	GF-AAS	1,000
Barium, Ba	GF-AAS	700
Mercury, Hg	GF-AAS	1,000
Cadmium, Cd	GF-AAS	700
Cadmium	Spectro	500
Calcium, Ca	GF-AAS	700
Chromium, Cr	GF-AAS	700
Cobalt, Co	GF-AAS	700
Copper, Cu	GF-AAS	700
Cyanide, CN	GF-AAS	1,500
Iron (Fe <sup>2+</sup> )	GF-AAS	700
Iron, Fe	GF-AAS	700
Lead (Pb <sup>2+</sup> )	GF-AAS	700
Lead, Pb	GF-AAS	700
Magnesium, Mg	GF-AAS	700
Manganese, Mn	GF-AAS	700
Molybdenum, Mo	GF-AAS	700
Nickel, Ni	GF-AAS	700
Potassium, K	GF-AAS	700
Selenium, Se	GF-AAS	700
Silver, Ag	GF-AAS	700
Silicon, Si	GF-AAS	700
Sodium, Na	GF-AAS	700
Tin, Sn	GF-AAS	700
Zinc (Zn <sup>2+</sup> )	Spectro	700
Zinc, Zn	GF-AAS	700
Floride		850

\* Please contact the offices for more information

\*\* COD analysis would be charged if COD value are not provided