

Schedule

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Certificate No. : LA-1993-0064-A

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FIELD OF TESTING: Chemical and Biological Testing

MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	STANDARD METHODS / TECHNIQUES / EQUIPMENT	SIGNATORIES
A Oils & Fats	1. Acid value / F.F.A	AOCS Ca 5a-40 (2009) / ISO 660 (1996)	JW, YKW, JC
	2. Anisidine value	AOCS Cd 18-90 (2009) FOSFA (1991)	JW, YKW, JC
	3. Ash	AOCS Ca 11-55 (2009)	JW, YKW, JC
	4. Cholesterol	ATS QWIFD OF 26 / HPLC	JW, JC
	5. Cloud point	AOCS Cc 6-25 (2009), BS 684 Section 1.1.5 : 1987 (1993)	JW, YKW, JC
	6. Cold test	AOCS Cc 11-53 (2009)	JW, YKW, JC
	7. Colour - Lovibond	ISO 15305 (1998) AOCS Cc 13e-92 (2009)	JW, YKW, JC
	8. Fatty Acid Composition by GLC, cls, cis-trans isomers	AOCS Ce 2-66 (2009) (Preparation) AOCS Ce 1h-05 (2009) Capillary GLC AOCS Ce 1f-96 (2009)	JW, YKW, JC
	9. Insoluble impurities	AOCS Ca 3a-46 (2011), ISO 663 (2007)	JW, YKW, JC
	10. Iodine value	AOCS Cd 1d-92 (2009), ISO 3961 (1996)	JW, YKW, JC
	11. Melting point (slip point)	AOCS Cc 3-25 (2009)	JW, YKW, JC
	12. Moisture	AOCS Ca 2a-45 (2009) (Distillation Method)	JW, YKW, JC

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	13. Moisture & volatile matter	AOCS Ca 2c-25 (2009) (Air Oven Method) ISO 662 (1998) AOCS Ca 2b-38 (2009) (Hot Plate Method)	JW, YKW, JC
	14. Oil Stability Index (OSI) by Rancimat	AOCS Cd 12b-92 (2013)	JW, JC
	15. Peroxide value	AOCS Cd 8b-90 (2011) ISO 3960 (2001)	JW, YKW, JC
	16. Rancidity index	BS 684 : Section 2.32 : 1979 (1991)	JW, YKW, JC
	17. Refractive index	AOCS Cc 7-25 (2009)	JW, YKW, JC
	18. Saponification value	AOCS Cd 3-25 (2013) ISO 3657 (2002)	JW, YKW, JC
	19. Titer	AOCS Cc 12-59 (2009) Tr 1a-64	JW, YKW, JC
	20. Total fatty matter	BS 684 : Section 2.4 : 1976 (1992)	JW, YKW, JC
	21. Trace metals for Cu, Fe, Pb, Ni	ATS QWIFD OF 08 /Ashing /Acid digestion/ ICP-OES	JW, YKW, JC, THL
	22. Unsaponifiable matter	AOCS Ca 6a-40 (2011)	JW, YKW, JC
B SAUCES	1. Benzoic Acid	ATS QWIFD FC 01 / Steam Distillation / HPLC	JW, JC, RVT
	2. Nitrogen (soy sauce)	ATS QWI FD/FC 21 / Kjeldahl Method	JW, JC, TF
C BEVERAGES & CORDIALS	1. Alcohol in wines and beers	AOAC 920.57 (2012)	JW, JC
	2. Benzoic acid	AOAC 979.08 Section 29.1.14 (2010) / HPLC	JW, JC, RVT
D BREADS & BAKERY PRODUCTS	3. Propionic acid	ATS QWIFD FC 03, / HPLC	JW, JC

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E FOOD I General Foods: Microbiology 1 (General)	1. <i>Bacillus cereus</i>	FDA-BAM Online, Jan 2001, Updated Feb 2012, Chapter 14 ISO 7932- 2004	JW, SS, LKY, JT, KWS, NCJ JW, SS, LKY, KWS, NCJ
	2. <i>Campylobacter spp.</i>	FDA-BAM Online, Jan 2001, Chapter 7	JW,, SS, LKY, JT, KWS, NCJ
	3. <i>Clostridium perfringens</i>	FDA-BAM Online, Jan 2001, Chapter 16 ISO 7937-2004	JW, SS, LKY, JT, KWS, NCJ JW, SS, LKY, KWS, NCJ
	4. <i>Cronobacter spp (modified)</i>	ATS QWI MIC 75	JW, SS, LKY, JT, KWS, NCJ
	5. <i>E. coli</i> 0157: H7	AOAC Method No. 2000.14 / Neogen Reveal Microbial Screening Test	JW, SS, LKY, JT, KWS, NCJ
	6. <i>Enterobacteriaceae</i>	USP 41 (2018)/ ISO 21528-1: 2017 ISO 21528-2 : 2017	JW, SS, LKY, JT, KWS, NCJ JW, SS, LKY, KWS, NCJ
	7. Enumeration of Yeasts and Moulds in foods	ISO21527-2 : 2008	JW, SS, LKY, KWS, NCJ
	8. Enumeration of Coliform and presumptive E.coli (MPN Methods)	ISO 4831 : 2006 & ISO 7251 : 2005	JW, SS, LKY, KWS, NCJ
	9. Gluten Test	ATS QWI MIC 85 / Enzyme Immunoassay by Veratox Gliadin Test Kits	JW, SS, LKY, JT, KWS, NCJ
	10. <i>Listeria monocytogenes</i>	FDA-BAM Online Chapter 10: Mar 2017 ISO 11290-1: 2017	JW, SS, LKY, JT, KWS, NCJ JW, SS, LKY, KWS, NCJ

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	11. Isolation and detection of Group B <i>Streptococcus</i> from Food Products	Food Borne Pathogen & Disease Volume 00 Number 00, 2009	JW, SS, LKY, KWS, LWY, NCJ
	12. <i>Pseudomonas Spp</i> in Meat & Meat Product	ISO 13720:2010	JW, SS, LKY, KWS, NCJ
	13. <i>Salmonella spp.</i> In Food Chain	ISO 6579-1: 2017	JW, SS, LKY, JT, KWS, NCJ
	14. <i>Salmonella spp.</i>	FDA-BAM Online Chapter 5: Jul 2018	JW, SS, LKY, JT, KWS, NCJ
	15. <i>Staphylococcus aureus</i>	FDA-BAM Online Chapter 12: Mar 2016 ISO 6888-1: 1999	JW, SS, LKY, JT, KWS, NCJ JW, SS, LKY, KWS, NCJ
	16. <i>Shigella spp</i>	ATS QWI MIC 21	JW, SS, LKY, JT, KWS, NCJ
	<i>Shigella spp. –Horizontal Method</i>	ISO 21567: 2004	JW, SS, LKY, KWS, NCJ
	17. Sulfite Reducing Bacteria	ISO 15213:2003	JW, SS, LKY, KWS, NCJ
	18. Thermophilic Bacteria	ATS QWI MIC64	JW, SS, LKY, JT, NCJ
	19. Total Colony Count	FDA-BAM Online Chapter 3: Jan 2001	JW, SS, LKY, JT, NCJ, KWS
	20. Total Colony Count from surfaces by Contact Plate & Swab	ISO 18593 (1 st Edition 2004-06-01)	JW, SS, LKY, KWS, NCJ
	21. Total Colony Count Technique at 30°C	ISO 4833: 2013	JW, SS, LKY, KWS, NCJ
	22. Total Coliform Count	FDA-BAM Online Chapter 4: Jul 2017	JW, SS, LKY, JT, NCJ, KWS
	23. Total <i>E.Coli</i> Count	FDA-BAM Online Chapter 4: Jul 2017	JW, SS, LKY, JT, NCJ, KWS

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General Foods: Microbiology 2 (Rapid Method)	24. Total Acid Producing Bacteria	ATS QWI MIC 65,	JW, SS, LKY, JT, KWS, NCJ
	25. <i>Vibrio cholera</i>	FDA-BAM Online, May 2004, Chapter 9	JW, SS, LKY, JT, KWS
	26. <i>Vibrio parahaemolyticus</i>	FDA-BAM Online, May 2004, Chapter 9	JW, SS, LKY, JT, KWS
	27. Yeast and Mould Count	FDA-BAM Online Chapter 18 : Apr 2001	JW, SS, LKY, JT, NCJ, KWS
	28. Yeast and Mould - Horizontal Method	ISO 21527-2: 2009	JW, SS, LKY, JT, NCJ, KWS
	29. <i>Yersinia enterocolitica</i>	ATS QWI MIC 78	JW, SS, LKY, JT, KWS, NCJ
	1. Bacteria Confirmation of <i>Bacillus cereus</i> and <i>Pseudomonas aeruginosa</i> by Real-Time PCR	ATS QWI MIC 100	JW, SS, LKY, KWS, NCJ
	2. Meat Speciation in Food and Feed by Real-Time PCR	ATS QWI MIC 94	JW, SS, LKY, LHM, NCJ
	3. <i>Salmonella.spp</i> & <i>Listeria monocytogenes</i> in Food by Real-Time PCR	ATS QWI MIC 93A-B	JW, SS, LKY, JT, NCJ
	4. GMO detection in Food and Feed by Real-Time PCR	ATS QWI MIC 99	JW, SS, LKY, NCJ
	5. <i>Salmonella Spp</i> (Rapid Method)	Screening using SOLUS and confirmation using ISO 6579-1: 2017	JW, SS, LKY, KWS, NCJ
	6. <i>Listeria Spp</i> (Rapid Method)	Screening using SOLUS and confirmation using ISO 11290-1: 2017	JW, SS, LKY, KWS, NCJ

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	STANDARD METHODS / TECHNIQUES / EQUIPMENT	SIGNATORIES
II General Foods: Nutritional Labelling <ul style="list-style-type: none"> • Bread • Canned Vegetables • Cereal Products / Flour • Cocoa Products • Confectionery • Dairy and Dairy Products – Butter • Dairy and Dairy Products – Cheese • Dried Milk • Evaporated Milk (unsweetened) • Fruits and Fruit Products • Meat and Meat Products • Milk • Non-Alcoholic Beverages 	1. Ash Content	ATS QWIFD FC 05 AOAC 930.22 Section 32.3.08 (2012) AOAC 925.51 Section 42.1.12A (2012) AOAC 923.03 Section 32.1.05 (2012) AOAC 972.15 Section 31.1.04 (2012) AOAC 925.49 Section 44.3.01C (2012) AOAC 920.117 Section 33.6.05 (2012) AOAC 935.42 Section 33.7.07 (2012) AOAC 930.30 Section 33.5.05 (2012) AOAC 945.48 Section 33.4.01E (2012) AOAC 940.26 Section 37.1.18A (2012) AOAC 920.153 Section 39.1.09 (2012) AOAC 945.46 Section 33.2.10 (2012) AOAC 950.14 Section 29.1.03A (2012)	JW, JC, TF, SH, THL

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<ul style="list-style-type: none"> Nuts and Nut Products Seafood Spices Sweetened Condensed Milk Tea 	2. Moisture	AOAC 950.49 Section 40.1.08 (2012) AOAC 938.08 Section 35.1.14 (2012) AOAC 941.12 Section 43.1.05A (2012) ISO 928 / ASTA Method 3.0 AOAC 920.115 Section 33.4.02E (2012) AOAC 920.100 Section 30.1.25A (2012)	JW, JC, TF, SH
<ul style="list-style-type: none"> Spices Flour Meat and Poultry Sugar 	3. Fat Content	ATS QWIFD FC 20 AOAC 986.21 Section 43.1.04 (2010) / Distillation Method AOAC 925.10 Section 32.1.03 (2010) / Air Oven Drying AOAC 950.46 Section 39.1.02B (2010) / Air Oven Drying AOAC 925.45 Section 44.1.03B (2010) / Air Oven Drying ATS QWIFD FC 22	
<ul style="list-style-type: none"> Nuts & Nut Products Meat and Poultry Flour / Bread 		AOAC 948.22 Section 40.1.05 (2010) / Gravimetric Method / Ether Extract AOAC 960.39 Section 39.1.05 (2010) / Ether Extract AOAC 922.06 Section 32.1.14 (2010) / Acid Hydrolysis / Solvent Extraction	

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<ul style="list-style-type: none"> Coffee 		AOAC 920.97 Section 30.1.17 (2010) / Petroleum Ether Extract	
<ul style="list-style-type: none"> Seafood 		AOAC 948.15 Section 35.1.23 (2010) / Acid Hydrolysis / Solvent Extraction	
<ul style="list-style-type: none"> Milk Products 		AOAC 905.02 Section 33.2.25 (2010) / Alkaline Hydrolysis (Rose-Gottlieb Method)	
<ul style="list-style-type: none"> Dried Milk Products 		AOAC 932.06 Section 33.5.08 (2010) / Alkaline Hydrolysis (Rose-Gottlieb Method)	
<ul style="list-style-type: none"> Food & Food Ingredients 	4. Protein	ATS QWIFD FC 21 / Kjeldahl Method	JW, JC, TF, SH
	5. Cholesterol	ATS QWIFD FC 28 / HPLC	JW, JC, TF, SH
	6. Metals in Liquid and Solid Food Products: (Al, As, B, Ca, Cd, Cr, Cu, Fe, K, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Si, Sn, Ti and Zn)	ATS QWIFD FC 25 / Acid Digest /ICP- OES	JW, JC, THL, QE
	7. Dietary Fibre	AOAC 985.29 Section 45.4.07 (2010)	JW, JC, TF, SH
	8. Fatty acid composition – cis, cis-trans isomers	AOCS (2009) Ce 1h-05 / GC	JW, JC
	9. Niacin (Vit B3)	ATS QWIFD FC 109 / HPLC	JW, JC, SH
	10. Nitrogen / Protein in Solid Food	ATS QWIFD FC 118 / Thermo Flash 4000	JW, JC, TF, SH
	11. Vitamin A – Retinol	ATS QWIFD FC 33 / HPLC	JW, JC, TF, SH
	12. Vitamin A - β -Carotene	ATS QWIFD FC 34 / HPLC	JW, JC, TF, SH
	13. Vitamin B ₁	AOAC 942.23 Section 45.1.05 (2010) / Fluorometry	JW, JC, SH

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	14. Vitamin B ₂	AOAC 970.65 Section 45.1.08 (2010)/ Fluorometry	JW, JC, SH
	15. Vitamin B ₆	ATS QWIFD FC 116 / HPLC FLD	JW, JC, SH
	16. Vitamin C	AOAC 967.22 Section 45.1.15 (2010)/ Fluorometry	JW, JC, TF, SH
	17. Vitamin D ₃	ATS QWIFD FC 117 / HPLC DAD using Vitamin D ₂ as Internal Standard	JW, JC, SH
	18. Vitamin E – Alpha Tocopherol	ATS QWIFD FC 52/ HPLC	JW, JC
	19. Saturated Fat / mono-unsaturated fat / poly-unsaturated fat / trans fat	AOCS (2009) Ce 1h-05	JW, JC
	20. Sugar Profile in Food	ATS QWIFD FC 91 / HPAEC-PAD (Glucose, Fructose, Sucrose, Lactose and Maltose)	JW, JC, HWI
	21. Starch	ATS QWIFD FC 125 / Enzymatic Hydrolysis / HPAE-PAD	JW, HWI
	22. Taurine	ATS QWIFD FC 108 / HPLC	JW, JC
	23. Total Carbohydrate and Energy Value	ATS QWIFD FC 23 by calculation	JW, JC, TF, SH
	24. Total Sugar (as Invert Sugar)	AOAC 923.09 Section 44.1.15 (2010)	JW, JC, TF, HWI
	25. Water Activity	ATS QWIFD FC 96	JW, JC
	26. Water Content by Karl Fischer	ATS QWIFD FC 141	JW, JC
	27. Low Molecular Weight Resistant Maltodextrin	ATS QWIFD FC 164 / Enzymatic filtration by HPAEC PAP	JW, JC, HWI
III General Foods: Preservatives	1. Benzoic acid	ATS QWIFD FC 01 /Steam Distillation / HPLC	JW, JC, RVT

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	2. Nitrate and Nitrite	ATS QWIFD FC 24 / Cd Reduction / UV Spectrophotometer	JW, JC, QE, RVY
	3. Salt Content	ATS QWIFD FC 47 / Volumetric	JW, JC, RVT, TF
	4. Salt	ATS QWIFD FC 148 / Potentiometry	JW, JC, TF
	5. Sorbic acid	ATS QWIFD FC 04 / Steam Distillation / HPLC	JW, JC, RVT
	6. Sulphur Dioxide	AOAC 990.28 Section 47.3.43 (2010) / Optimised Monier Williams Method	JW, JC, QE
<ul style="list-style-type: none"> Beverages Carbonated Drinks & Decaffeinated 	7. Caffeine	ATS QWIFD FC 57 / HPLC	JW, JC, RVT
<ul style="list-style-type: none"> Sauces & Foodstuffs 	8. Methyl and Propyl Parabens	ATS QWIFD FC 71 / HPLC	JW, JC
IV General Foods: Mycotoxins			
Food and Food Ingredients	1. Aflatoxins (B1, B2, G1, G2)	ATS QWIFD FC 51 / HPLC	JW, JC, TF
	2. Zearalenone	ATS QWIFD FC 94 / HPLC	JW, JC, TF
	3. Patulin	ATS QWIFD FC 97 / HPLC	JW, JC, TF
	4. Deoxynivalenol	ATS QWIFD FC 114 / HPLC	JW, JC, TF
Cocoa / Coffee	5. Ochratoxin A	ATS QWIFD FC 54 / HPLC	JW, JC, TF
Milk and Milk Products	6. Aflatoxin M1	ATS QWIFD FC 70 / HPLC	JW, JC, TF
	7. Aflatoxin M1 & M2	ATS QWIFD FC 98 / HPLC	JW, JC, TF

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V General Foods: Food Safety & Others			
Food and Food Ingredients	1. 1-3-Dichloropropanediol (1, 3-DCP)	ATS QWIFD FC 56 / GCMS	JW, JC, RVT
	2. 3-monochloropropanediol (3-MCPD)	ATS QWIFD FC 27 / GCMS	JW, JC, RVT
	3. Phthalates	ATS QWIFD FC 112 / LC-MS-MS	JW, JC
	4. Acrylamide	ATS QWIFD FC 93 / LCMSMS	JW, JC
	5. Artificial sweetener	ATS QWIFD FC 88 / HPLC	JW, JC
	6. BADGE	ATS QWIFD FC 154 / LCMSMS	JW, JC
	7. Chloramphenicol in Milk	ATS QWIFD FC 90 / LCMSMS	JW, JC, HWI
	8. Chloramphenicol in Honey	ATS QWIFD FC 83 / LCMSMS	JW, JC, HWI
	9. Chloramphenicol in Seafood	ATS QWI FD FC 89 / LCMSMS	JW, JC, HWI
	10. Cyclamate (Cyclamic Acid)	ATS QWIFD FC 99 / HPLC	JW, JC
	11. Dicyandiamide using MAS-QuChERS	ATS QWIFD FC 140 / LC-MS-MS	JW, JC
	12. Histamine	ATS QWIFD FC 149 / LC-MS-MS	JW, JC
	13. Malachite and Leucomalachite Green	ATS QWIFD FC 92 / LCMSMS	JW, JC
	14. Melamine	ATS QWIFD FC 80 // LCMSMS	JW, JC, HWI
	15. Melamine and Cyanuric Acid	ATS QWIFD FC 85 / dilution/ LCMSMS	JW, JC
	16. Melamine	ATS QWIFD FC 82 / SPE/ LCMSMS	JW, JC, HWI
	17. Mercury	ATS QWIFD FC 26 / Acid Digestion / Flow Injection Mercury Analyser	JW, JC, THL, TF, QE

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Spices and Condiments	18. Nitrofurantoin in animal derived foods, seafood, seafood based sauces, milk and milk based products, essence products, honey and egg powder	ATS QWIFD FC 84 / LCMSMS	JW, JC
	19. pH in liquid / semi-solid foods	ATS QWIFD FC 45 / pH Meter	JW, JC
	20. Pesticides in Fruits & Vegetables, and in Dried Foods	ATS QWIENV ORG 22	YKW, PT, TTH
	21. Sudan, I, II, III and IV	ATS QWIFD FC 55 / HPLC	JW, JC
	22. Bound monochloropropanediol-(MCPD) and bound 2,3-epoxy-1-propanol (glycidol) in Fat and Oil products	AOCS Cd29b-13 (2013) / GCMS	JW, JC, RVT
	23. Bromine containing fumigants determined as total Inorganic Bromide in Cereals and plant origin products	CRL for single residue methods ATS QWIENV ORG31	YKW, PT, TTH, LFX
	24. Dithiocarbamate in fruits & vegetables, processed and preserved food	ATS QWIENV ORG30	YKW, PT, TTH, LFX
	25. Acid Insoluble Ash	ATS QWIFD FC 46	JW, JC, THL
26. Volatile and non-volatile oils	ATS QWIFD FC 66	JW, JC	
27. Volatile oils	ATS QWIFD FC 67 / Steam Distillation	JW, JC	

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F. CHINESE PROPRIETARY MEDICINES, COSMETICS, PHARMACEUTICAL AND HEALTH PRODUCTS	1. Aconitine Alkaloids	ATS QWIPP 20 / LCMSMS	JW, JC
	2. Ephedrine Alkaloids	ATS QWIPP 22 / LC/MS-MS	JW, JC
	3. Mercury	ATS QWIPP 01 / Acid Digestion / FIMS	JW, JC, THL, TF, QE
	4. Trace Elements : Cu, Pb, As, Cd, Sn	ATS QWIPP 02 / Acid digestion/ ICP-OES	JW, JC, THL, QE
	5. Drug Screening	ATS QWIPP 04 / GCMS ATS QWIPP 05 / HPLC-DAD	PT, TTH, LFX JW, JC, HWI
	6. Lovastatin	ATS QWIPP 23 / HPLC-DAD	JW, JC
	7. <i>Candida Albicans</i>	USP 41 (2018), Section <61> and <62>	JW, SS, LKY, JT, NCJ, KWS
	8. <i>Clostridia</i> in Pharmaceutical Products	USP 41 (2018), Section <61> and <62>	JW, SS, LKY, NCJ, KWS
	9. <i>E. Coli</i>	USP 41 (2018), Section <61> and <62>	JW, SS, LKY, JT, NCJ, KWS
	10. <i>Pseudomonas aeruginosa</i>	USP 41 (2018), Section <61> and <62>	JW, SS, LKY, JT, NCJ, KWS
	11. <i>Salmonella</i>	USP 41 (2018), Section <61> and <62>	JW, SS, LKY, JT, NCJ, KWS
	12. <i>Staphylococcus aureus</i>	USP 41 (2018), Section <61> and <62>	JW, SS, LKY, JT, NCJ, KWS
	13. Total Plate Count	USP 41 (2018), Section <61> and <62>	JW, SS, LKY, JT, NCJ, KWS
	14. Total Yeast and Mould Count	USP 41 (2018), Section <61> and <62>	JW, SS, LKY, JT, NCJ, KWS
	15. Microbiological Methods for Cosmetics	FDA BAM Chapter 23, Jul 2017	JW, SS, LKY, KWS, NCJ, LWY, JT

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G PETROLEUM PRODUCTS (KEROSENE, GAS OIL, DIESEL, FUEL OIL)	1. Acid Number by Colour-Indicator Titration	ASTM D974-14e	JW, YKW, AS
	2. Acid Number Petroleum Products by Potentiometric Titration	ASTM D664-17a	JW, YKW, AS
	3. Additive Elements, Wear Metal and Contaminants in used Lubricating Oils by ICP-AES	ASTM D5185-18	JW, YKW, AS
	4. Aluminium and Silicon in Fuel Oils by Ashing, Fusion, ICP-AES	ASTM D5184-12 (2017)	JW, YKW, AS
	5. Ash from Petroleum Products	ASTM D482-13	JW, YKW, AS
	6. ASTM Colour of Petroleum Products (ASTM Colour Scale)	ASTM D1500-12 (2017)	JW, YKW, AS
	7. Calculated Carbon Aromaticity Index (CCAI)	ISO 8217 (2010)	JW, YKW, AS
	8. Calculated Cetane Index of Distillate Fuels (CCI)	ASTM 976-06 (2016)	JW, YKW, AS
	9. Cloud Point of Petroleum Products	ASTM D2500-17a	JW, YKW, AS
	10. Copper Corrosion from Petroleum Products by the Copper Strip Tarnish Test	ASTM D130-18	JW, YKW, AS
	11. Density / Specific Gravity / API Gravity of Liquid Petroleum by Hydrometer Method	ASTM D1298-12b (2017)	JW, YKW, AS
	12. Density, Relative Density and API Gravity of liquids by Digital Density Meter	ASTM D4052-16	JW, YKW, AS

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	STANDARD METHODS / TECHNIQUES / EQUIPMENT	SIGNATORIES
	13. Distillation at Atmospheric Pressure	ASTM D86-17	JW, YKW, AS
	14. Elements in Fuel Oils by ICP-AES (Al, Si, V, Ca, P, Zn, Na)	ATS QWIPET F13	JW, YKW, AS
	15. Flash Point by PMCC Tester	ASTM D93-16	JW, YKW, AS
	16. Hydrogen Sulphide in Fuel Oils by Rapid Liquid Phase Extraction	ASTM D7621-16 / IP570	JW, YKW, AS
	17. Kinematic Viscosity of Transparent & Opaque Liquids	ASTM D445-17	JW, YKW, AS
	18. Micro Carbon Residue	ASTM D4530-15	JW, YKW, AS
	19. Pour Point	ASTM D97-17b	JW, YKW, AS
	20. Sediment by Extraction	ASTM D473-07 (2017)	JW, YKW, AS
	21. Sulphur by Energy Dispersive X-Ray Fluorescence Spectrometry	ASTM D4294-16	JW, YKW, AS
	22. Total Sediment in Residual Fuels	ASTM D4870-09 (2014)	JW, YKW, AS
	23. Water by Coulometric Karl Fischer Titration	ASTM D6304-16	JW, YKW, AS
	24. Water by distillation	ASTM D95-13	JW, YKW, AS

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	STANDARD METHODS / TECHNIQUES / EQUIPMENT	SIGNATORIES
H ROHS ELECTRONIC/ ELECTRICAL COMPONENTS <ul style="list-style-type: none"> Plastic & Metals Plastics / Rubber / Polymer 	1. Cadmium and Lead	<u>Sample Preparation (Plastics)</u> EPA 3052 / Acid digestion / Microwave oven <u>Sample Preparation (Metals)</u> EN 13346 (Method B) / Acid digestion <u>Analysis</u> EPA 6010 / ICP – OES	YKW, PT, LGC
	2. Mercury	<u>Sample Preparation (Plastics)</u> EPA 3052 / Acid digestion / Microwave oven <u>Sample Preparation (Metals)</u> EN 13346 (Method B) / Acid Digestion <u>Analysis</u> USEPA 7471B / Cold Vapour technique / FIMS	YKW, PT, LGC
	3. Hexavalent chromium (Cr(VI)) in polymers and electronics by the colorimetric method	IEC 62321-7-2: 2017	YKW, PT, TTH
	4. Phthalates in Polymer(DIBP, DBP, BBP, DEHP, DNOP, DINP, DIDP)	ATS QWIENV GR 24 / GCMS (Hexane Extraction)	YKW, PT, TTH, LFX
	5. Phthalates in Plastics (DBP, BBP, DEHP, DNOP, DINP, DIDP)	ATS QWIENV GR 22 / GCMS (Diethyl ether extraction)	YKW, PT, TTH, LFX
	6. Polybromodiethyl Ether's (PBDE) and Polybromobiphenyl's (PBB)	<u>IEC 62321-6 (2015) / GCMS</u>	YKW, PT, LGC

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	STANDARD METHODS / TECHNIQUES / EQUIPMENT	SIGNATORIES	
• Coated Metals	7. Test for Presence of Hexavalent Chromium (Cr VI)	IEC 62321-7-1:2015	YKW, PT, LGC	
	8. Screening For Hazardous Elements (Cd, Pb, Hg, Cr & Br) by XRF	IEC 62321: 2008	YKW, PT, LGC	
I POLYMERS	1. Compositional Analysis of Sample by Thermogravimetry	ASTM E1131-08 (2014)	KT, LJH	
	2. Halogen (Chlorine and Bromine) By Ion Chromatography	EN 14582:2016 (Oxygen Bomb)	YKW, KT, MG	
	3. Transition Temperatures of Polymers By Differential Scanning Calorimetry	ASTM D3418-15	KT, LJH	
J PHARMACEUTICAL PRODUCTS	• Pharmaceutical And biological products, medical devices, ophthalmic products	1. Antimicrobial Effectiveness	USP 41 (2018), Section <51>	JW, SS, LKY
		2. Biological Indicator Population Assay	USP 41, 2018, Section <55>	JW, SS, LKY, KWS
		Evaluation Tests for Disinfectants and Antiseptics	TGA54	JW SS, LKY
		3. Growth Promotion Test	EP 9.0 2.6.1	JW, SS, LKY, CSJ
		4. Method Suitability / Validation Test (Bacteriostasis and Fungistasis) of sterility test	EP 9.0 2.6.1	JW, SS, LKY, CSJ
		5. Sterility Test	EP 9.0 2.6.1	JW, SS, LKY, CSJ

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	STANDARD METHODS / TECHNIQUES / EQUIPMENT	SIGNATORIES
<ul style="list-style-type: none"> Pharmaceutical and biological parenteral products, medical devices, purified water, process water, dialysate solutions Monitor plates and broths (settle plates, contact plates, air sampler strips, broths) from microbiological monitoring of manufacture environment 	6. Bacterial Endotoxins Test by Chromogenic Kinetic Assay Method	USP 41 (2018), Section <85>	JW, SS, LKY, CSJ
	7. Ethylene oxide and ethylene chlorohydrin in medical devices	ISO 10993-7:2008	YKW, TTH, PT, LFX
	8. Microbiological Identification Tests	ATS QWI MIC 103	JW, SS, LKY, CSJ, NCJ
K MICRO CONTAMINATION			
<ul style="list-style-type: none"> Natural & artificial products, polymeric & elastomeric materials, metals, products medical devices and other environmental volatile organics 	1. Non-Volatile Residual Analysis in Gas Delivery Components	ASTM G93-03 (Section 11.4.2.1 & 11.4.3)	YKW, KT, MG, LYL
	2. Particle Sizing and Counting by Microscopic Analysis	ISO 16232-3:2007E ISO 16232-4:2007E ISO 16232-7:2007E ISO 16232-9:2007E ISO 16232-10:2007E	YKW, KT, MG, LJH
	3. Volatile Organics by Dynamic Headspace GC/MSD	ATS QWIEL TM 16	YKW, KT, MG

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MATERIALS / PRODUCTS TESTED	TESTS / PROPERTIES	STANDARD METHODS / TECHNIQUES / EQUIPMENT	SIGNATORIES
<ul style="list-style-type: none"> Organic compounds in polymeric & elastomeric materials in a wide variety of pharmaceutical matrices (e.g. food, metals, tissues, etc) 	4. Identification of Organic Residue by Microscopic Fourier Transform Infra-Red Spectroscopy	ATS QWI EL TM 17	YKW, KT, MG
General Electronic components	5. Ionic Analysis of Circuit Boards by IC	IPC TM 650 2.3.28 Rev B	YKW, KT, MG
L COATING MATERIALS	1. Phosphorus content in Nickel Coating	ATS QWIENV GR 21	YKW, PT, LGC
	2. Salt Spray Test	ASTM B117-16	KT, MG

SIGNATORIES:

INITIALS	NAMES	INITIALS	NAMES
1. AS	Ms. Amy Sol	14. LGC	Ms. Lee Geok Cheng
2. CSJ	Mr. Cristopher San Jose	15. MG	Ms. Michelle Goh
3. HWI	Ms. Hing Woei In	16. NCJ	Ms. Ng Ching Joo
4. JC	Ms. Joanne Chia	17. PT	Ms. Pansy Teo
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10. LYL	Ms. Low Yik Ling	23. THL	Ms. Tan Hwee Lee
11. LFX	Mr. Lo Fu Xuan	24. TF	Ms. Tricia Foo
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This laboratory is accredited in accordance with the recognised International Standard ISO/IEC 17025. A laboratory's fulfilment of the requirements of ISO/IEC 17025 means the laboratory meets both the technical competence requirements and **management system requirements** that are necessary for it to consistently deliver technically valid test results. The **management system requirements** in ISO/IEC 17025 are written in language relevant to laboratory operations and operate generally in accordance with the principles of ISO 9001.

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Appendix 1 Screening of Common Adulterants in Chinese Proprietary Medicines, Dietary Supplements and Pharmaceutical Products

Associated effect groupings	Possible adulterants
Analgesics (19)	Aspirin, Codeine, Diclofenac, Fenbufen, Flurbiprofen, Ibuprofen, Indomethacin, Ketoprofen, Ketorolac Tromethamine, Mefenamic acid, Morphine, Naproxen, Nimesulide, Paracetamol, Phenylbutazone, Piroxicam, Salicylamide, Sulindac, Tramadol
Androgenic Steroids (12)	Danazol, Dehydroepiandrosterone (DHEA), Fluoxymesterolone, Mesterolone, Methandieone, Methyltestosterone, Nandrolone, Oxandrolone, Oxymetholone, Stanozolol, Testosterone, Trenbolone
Anti- Asthmatics (26)	Aminophylline, Bambuterol, Beclomethasone, Betamethasone, Clenbuterol, Clobetasol Propionate, Cortisone acetate, Desoxymethasone, Fluocinolone acetonide, Dexamethasone, Diflucortolone-21-valerate, Ephedrine, Fluocinonide, Fluticasone propionate, Formoterol Fumarate Dihydrate, Hydrocortisone, Ketotifen fumarate, Methylprednisolone, Mometasone furoate, Prednisolone, Prednisone, Salbutamol, Terbutaline, Theophylline, Triamcinolone, Triamcinolone acetonide
Antibiotics (Internal use) (14)	Amoxicillin, Ampicillin, Cefaclor, Ciprofloxacin, Cloxacilin, Doxycycline, Metronidazole, Minocycline, Ofloxacin, Penicillin V Potassium, Penicilin G Sodium, Tetracycline, Tinidazole, Trimethoprim
Anti-Histamines (20)	Antazoline, Brompheniramine, Buclizine, Carbinoxamine, Cetirizine, Chlorpheniramine, Cinnarizine, Cyclizine, Cyproheptadine, Dimenhydrinate, Diphenhydramine, Hydroxyzine, Loratadine, Meclozine, Mepyramine, Pheniramine, Promethazine, Terfenadine, Trimeprazine, Triprolidine
Anti-Inflammatory Agents (32)	Aspirin, Beclomethasone, Betamethasone, Clobetasol propionate, Cortisone acetate, Desoxymethasone, Dexamethasone, Diclofenac, Diflucortolone-21-valerate, Fenbufen, Fluocinolone acetonide, Fluocinonide, Flurbiprofen, Fluticasone propionate, Hydrocortisone, Ibuprofen, Indomethacin, Ketoprofen, Ketorolac Tromethamine, Mefenamic acid, Methylprednisolone, Mometasone furoate, Naproxen, Nimesulide, Phenylbutazone, Piroxicam, Prednisolone, Prednisone, Salicylamide, Sulindac, Triamcinolone, Triamcinolone acetonide
Anti-Pyretics (4)	Asprin, Diazepam, Ibuprofen, Paracetamol
CNS Stimulants & Anorectics (14)	Amphetamine, Clobenzorex, Cocaine, Diethylpropion, Ephedrine, Fenfluramine, Mazindol, Methylamphetamine, Methylphenidate, Norephedrine, Phentermine, Phenylpropanolamine, Pseudoephedrine, Sibutramine
Erectogenic agents (7)	Apomorphine, Pentoxifylline, Phentolamine mesylate, Sildenafil citrate, Tadalafil, Vardenafil, Yohimbine
Estrogenic steroids (6)	Diethylstilboesterol, Estradiol, Estriol, Estrone, Ethinyloestradiol, Mestranol
Progestogenic steroids (14)	Desogestrel, Dydrogesterone, Ethisterone, Hydroxyprogesterone 17-alpha, Hydroxyprogesterone hexanoate, Lynoestrenol, Medroxyprogesterone, Medroxyprogesterone acetate, Megestrol, Megestrol acetate, Norethisterone, Norgestimate, Norgestrel, Progesterone
Thyroid agents (4)	Diiodothyronine, Liothyronine, Thyroxine, Tiratricol