ORGANISMO URUGUAYO DE ACREDITACION

El Organismo Uruguayo de Acreditación (OUA) otorga el presente certificado a

LABORATORIO TECNOLÓGICO DEL URUGUAY

LATU

Avda. Italia 6201, Montevideo – Uruguay

Quien ha sido acreditado bajo los requisitos de la Norma ISO/IEC 17025:2017 (equivalente a Norma UNIT-ISO/IEC 17025:2017). Esto constituye la expresión formal de su competencia técnica para actuar como Laboratorio de Ensayo en el alcance establecido en el presente documento y en la página web de OUA. (www.organismouruguayodeacreditacion.org).

Ciclo de Acreditación **11.10.2022** al **11.10.2026**

El Laboratorio de Ensayo queda identificado con la siguiente marca de acreditación:

ORGANISMO URUGUAYO DE ACREDITACION
LE 009
Laboratorio de Ensayo

Ing. Liliane Somma
Directora Ejecutiva

DETALLE DEL ALCANCE:

Nº REVISIÓN:	11
FECHA DE REVISIÓN:	01/06/2026

ENSAYOS EFICIENCIA ENERGETICA			
PRODUCTO / MATERIAL A ENSAYAR	**ENSAYO**	**RANGO**	**MÉTODO DE ENSAYO**
Calentadores de agua eléctricos de acumulación	Capacidad nominal	≤ 300 L	Norma UNIT-IEC 60379-1987 (Adopción febrero 2007, revisión diciembre 2011). Norma UNIT-IEC 60335-2-21:2012 Norma UNIT-NM 60335-1:2010 Norma UNIT 1157:2011
	Temperatura promedio del agua extraída relacionada a 50K (θp)	< 100ºC	
	Consumo de energía mensual	≤ 1230 kWh	
	Pérdida estática por cada 24 horas (Qpr)	≤ 27 kWh	
	Tiempo de calentamiento (t_R -50)	≤ 7 h	
	Potencia nominal	≤ 2300 W	
	Eficiencia Energética (EE)	No aplica	

ENSAYOS JUGUETES			
PRODUCTO / MATERIAL A ENSAYAR	**ENSAYO**	**RANGO**	**MÉTODO DE ENSAYO**
Juguetes	Todos los ensayos de la norma establecida en “Método de ensayo”. Salvo las excepciones identificadas	Cumple / No cumple	Norma NM 300-1:2002 Seguridad de los juguetes. Parte 1 “Propiedades Generales, mecánicas” Excepto puntos 5.11.3, 5.13 y ensayos de fulminantes.
Juguetes	Todos los ensayos de la norma establecido en “Método de ensayo”	Cumple / No cumple	Norma NM 300-2:2002 Seguridad de los juguetes. Parte 2: Inflamabilidad.
Juguetes	Todos los ensayos de la norma establecida en “Método de ensayo”.	Cumple / No cumple	Norma NM 300-6:2002 Seguridad de los juguetes. Parte 6: Seguridad de los juguetes eléctricos.

ENSAYOS BOLSAS PLASTICAS			
PRODUCTO / MATERIAL A ENSAYAR	**ENSAYO**	**RANGO**	**MÉTODO DE ENSAYO**
Bolsas plásticas	Dimensiones	< 2 m	ABNT NBR 14937:2023 Sacolas plásticas tipo camiseta – Requisitos e métodos de ensaio.
	Resistencia a la carga dinámica bolsas	Cumple / No cumple	
	Resistencia a la carga estática bolsas	Cumple / No cumple	
Bolsas plásticas y films plásticos	Elongación Longitudinal y Transversal	< 1500 %	ASTM D 882-18 Standard Test Method for Tensile Properties of Thin Plastic Sheeting.
	Tracción Longitudinal y Transversal	< 80 kgf/mm^2	
	Espesor	< 1 mm	ISO 4593:1993 (E) Plastics — Film and sheeting — Determination of thickness by mechanical scanning.
Bolsas plásticas	Análisis térmico DSC (Differential Scanning Calorimetry)	Presencia / ausencia de resinas declaradas	PEC.EDM.102 v4 Análisis por DSC
	Análisis FTIR (espectrometría infrarroja por transformada de Fourier)	Presencia / ausencia de resinas declaradas	PEC.EDM.521 v7 Análisis por FTIR.

ENSAYOS LANAS			
PRODUCTO / MATERIAL A ENSAYAR	**ENSAYO**	**RANGO**	**MÉTODO DE ENSAYO**
Lana	Muestreo	No aplica	IWTO Core Test Regulations Ed. 2023
Lana	Muestreo	No aplica	IWTO Condition Testing Regulations for Scoured or Carbonised Wool Ed. 1999
Lana	Muestreo	No aplica	IWTO Condition Testing Regulations for Wool Tops Ed. 1996
Lana	Muestreo	No aplica	IWTO Sliver Test Regulations Ed. 2020
Lana	Muestreo	No aplica	IWTO Colour Test Regulations for raw wool Ed. 2007
Lana	Medida del promedio y distribución del diámetro de fibra utilizando el Sirolan- Laserscan Fibre Diameter Analyser.	Hasta 38 µm	IWTO-12-12 IWTO Core Test Regulations Ed. 2023 IWTO Sliver Test Regulations Ed. 2020
Lana	Determinación de la base lana y base materia vegetal de coreo de muestras de lana bruta.	(hasta 70) % wb (hasta 9) % vmb	IWTO-19-24 IWTO Core Test Regulations Ed. 2023
Lana	Determinación del diámetro medio de fibra de coreo de muestras de lana bruta por el método Air-Flow.	Hasta 38 µm	IWTO-28-13 IWTO Core Test Regulations Ed. 2023
Lana	Método para la medida de color de lana bruta.	X: (59-70) Y: (62-75) Z: (45-65) Y-Z: (hasta 17) D65/10	IWTO-56-20 IWTO Colour Test Regulations for raw wool Ed. 2007
Lana	Cálculo de certificados IWTO combinados para lana bruta	No aplica	IWTO-31-02
Lana	Método para la determinación de materia soluble en diclorometano en lana peinada, lavada o carbonizada.	Hasta 2%	IWTO-10-24 Excluyendo el método NIR IWTO Core Test Regulations Ed. 2023
Lana	Método para la determinación de la masa seca y masa comercial de lana lavada o carbonizada.	Hasta 25%	IWTO-33-03 IWTO Condition Testing Regulations for Scoured or Carbonised Wool Ed. 1999
Lana	Determinación de la masa seca y masa comercial de lana tops.	Hasta 25%	IWTO-34-17 IWTO Condition Testing Regulations for Wool Tops Ed. 1996
Lana	Método de ensayo para la determinación del diámetro medio de las fibras de lana en cintas peinadas usando el equipo Air-Flow.	Hasta 37 µm	IWTO-6-13 IWTO Sliver Test Regulations Ed. 2020
Lana	Determinación de la longitud de fibra y parámetros de distribución.	(hasta 105) mm	IWTO-17-22 IWTO Sliver Test Regulations Ed. 2020
Lana	Medición del color de cintas de lana.	X: (59-70) Y: (62-75) Z: (45-65) Y-Z: (hasta 17) D65/10	IWTO-35-20
Lana y otras fibras animales	Método para determinar los parámetros de distribución del diámetro de fibra y porcentaje de fibras meduladas en lana y otras	Hasta 40µm	IWTO-8-11

	fibras animales utilizando el microscopio de proyección.		

ENSAYOS FORESTALES			
PRODUCTO / MATERIAL A ENSAYAR	**ENSAYO**	**RANGO**	**MÉTODO DE ENSAYO**
Madera contrachapada (Plywood)	Resistencia a la flexión y módulo de elasticidad	Celda de carga de hasta 50kN	AS/NZS 2269.1 2012 Apartados 7.1 y 7.2
Madera contrachapada (Plywood)	Dimensiones, espesor, largo, ancho y cuadratura.	Plywood de espesores entre 4 a 50 mm, largos y anchos según estándares (por ejemplo 2,40m x 1,20m)	AS/NZS 2098.4:2006 Apartados 6.2, 6.3 y 6.4
Madera contrachapada (Plywood)	Calidad de unión de la madera contrachapada – Prueba de cincel - Prueba de unión tipo A mediante vaporización.	(0 a 10) de valor de calidad de encolado	AS/NZS 2098.2:2012 con tratamiento según 7.2.2- Tipo A con vapor
Madera	Peso específico aparente (densidad básica)	(0.2 a 0.8) g/cm^3	TAPPI/ANSI T 258 om-21
Madera y productos derivados de la madera	Humedad	(1 a 100) % (base húmeda o equivalente base seca)	ASTM D4442-20
Madera contrachapada (Plywood)	Humedad	(3 a 30) %	AS/NZS 2098.1:2006
Chips de madera	Peso específico básico de Chips	(0.3 a 0.8) g /cm^3	PEC.FORES.015 Versión 3 basado en SCAN – CM 43
Pulpa (FRB)	Gramaje (masa por unidad de area) Preparación de hojas de laboratorio para ensayos de pulpa.	(60 ± 2) g/m^2 (base seca) (65± 2) g/m^2 (base húmeda)	ISO 5270:2022 ISO 536:2019 ISO 5269-1:2005
Pulpa (FRB)	Espesor Preparación de hojas de laboratorio para ensayos de pulpa.	(150 a 500) micras	ISO 5270:2022 ISO 534:2011 ISO 5269-1:2005
Pulpa (FRB)	Volumen específico por cálculo Preparación de hojas de laboratorio para ensayos de pulpa.	No corresponde	ISO 5270:2022 ISO 5269-1:2005
Pulpa (FRB)	Densidad por cálculo Preparación de hojas de laboratorio para ensayos de pulpa.	No corresponde	ISO 5270:2022 ISO 5269-1:2005
Pulpa (FRB)	Resistencia a la tracción Preparación de hojas de laboratorio para ensayos de pulpa.	Celda de carga de hasta 300N	ISO 5270:2022 ISO 1924-2:2008 ISO 5269-1:2005
Pulpa (FRB)	Índice de tracción por cálculo	No corresponde	ISO 5270:2022

ENSAYOS SEGURIDAD ELECTRICA			
PRODUCTO / MATERIAL A ENSAYAR	**ENSAYO**	**RANGO**	**MÉTODO DE ENSAYO**
Fichas y tomacorrientes para usos domésticos y similares	Capítulo 8 – Marcado	Cumple/ No cumple	UNIT-NM 60884-1:2009 Fichas y tomacorrientes para usos domésticos y similares -Parte 1: Requisitos generales
	Capítulo 10 – Protección contra contactos eléctricos Ensayos 10.1 - 10.2 - 10.3 - 10.4 – 10.5 - 10.6 - 10.7	Cumple/ No cumple	

ENSAYOS SEGURIDAD ELECTRICA			
PRODUCTO / MATERIAL A ENSAYAR	**ENSAYO**	**RANGO**	**MÉTODO DE ENSAYO**
	Capítulo 11 – Disposiciones para la puesta a tierra Ensayo 11.5	Cumple/ No cumple	
	Capítulo 16 – Resistencia al envejecimiento, protección proporcionada por las envolventes y resistencia a la humedad Ensayo 16.3	Cumple/ No cumple	
	Capítulo 17 – Resistencia de aislación y rigidez dieléctrica (prev. 16.3) Ensayos 17.1 – 17.1.1 – 17.1.2 – 17.2	Cumple/ No cumple	
	Capítulo 25 – Resistencia al calor Ensayos 25.1 – 25.2 – 25.3 – 25.4	Cumple/ No cumple	
	Capítulo 27 – Líneas de fuga, distancias en aire y distancias a través del material sellado Ensayos 27.1 – 27.2 – 27.3	Cumple/ No cumple	
	Capítulo 28 – Resistencias del material aislante Ensayos 28.1.1 – 28.1.2 – 28.2	Cumple/ No cumple	
Interruptores para instalaciones eléctricas fijas, domiciliarias y similares	Capítulo 8 – Marcado	Cumple/ No cumple	UNIT-NM 60669-1:2004 Interruptores para instalaciones eléctricas fijas, domiciliarias y similares - Parte 1: Requisitos generales
	Capítulo 10 – Protección contra choques eléctricos Ensayos 10.1 - 10.2 - 10.3.1 – 10.3.2 - 10.4 – 10.5 - 10.6 - 10.7	Cumple/ No cumple	
	Capítulo 11 – Disposiciones para la puesta a tierra Ensayo 11.4	Cumple/ No cumple	
	Capítulo 15 – Resistencia al envejecimiento, protección asegurada por las envolturas y resistencia a la humedad Ensayo 15.3	Cumple/ No cumple	
	Capítulo 16 – Resistencia de aislación y rigidez dieléctrica Ensayos 16.1 – 16.2	Cumple/ No cumple	
	Capítulo 21 – Resistencia al calor Ensayos 21.1 – 21.2 – 21.3	Cumple/ No cumple	
	Capítulo 23 – Líneas de fuga, distancias en aire y distancias a través del material de relleno Ensayos 23.1 – 23.2	Cumple/ No cumple	

ENSAYOS SEGURIDAD ELECTRICA			
PRODUCTO / MATERIAL A ENSAYAR	**ENSAYO**	**RANGO**	**MÉTODO DE ENSAYO**
	Capítulo 24 – Resistencias del material aislante al calor anormal, al fuego y a las corrientes superficiales Ensayos 24.1.1 – 24.2	Cumple/ No cumple	
Calentadores de agua eléctrico de acumulación	Capítulo 5, 6, 7, 8, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29 30, 31, 32. Excepto calentadores que tengan circuitos electrónicos asociados a su funcionamiento (calefones “Smart”), y los calentadores cuya clasificación sea mayor a IP X4)	Cumple/No cumple	UNIT-IEC 60335 -1:2010 UNIT-IEC 60335-2-21:2012

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
MILK and DAIRY PRODUCTS as specified	<u>Chemical Tests</u>	Documented In-House Methods identified by method number based on standard methods	
Butter, Butter Oil, Cheese	Moisture	PEC.AGROPEC.037 based on: ISO 3727-1/IDF 80-1:2001 ISO 5534/IDF 4:2004	Lab - AGROPEC
Dried Milk, Milk Powders, Dried Cheese, Whey Powder		IDF 26A:1993	
Milk (liquid) Skimmed Milk (Milk solids not fat)		ISO 6731/IDF 21:2010	
Dulce de Leche		ISO 6734/IDF 15:2010	
Butter, Butter Oil	Fat acidity	PEC.AGROPEC.137 based on: AOAC Official Methods of Analysis 969.17:1974 2023 22nd Edition	Lab - AGROPEC
Dried Milk	Titratable Acidity	PEC.AGROPEC.043 according to ISO 6091/IDF 86:2010 NOM-222-SCFISAGARPA-2018	
Butter, Butter Oil	Ash	PEC.AGROPEC.040 based on:	Lab - AGROPEC
Dried Milk, Milk Powders, Whey Powder		AOAC Official Methods of Analysis 930.30:1930 2023 22nd Edition	
Milk, Dulce de Leche		AOAC Official Methods of Analysis 930.30:1930 2023 22nd Edition	
Dried whey and dry milk	Insolubility index at 24ºC	PEC.AGROPEC.175 based on ISO 8156/IDF 129:2005	Lab - AGROPEC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
MILK and DAIRY PRODUCTS as specified: (cont'd)	Chemical Tests (cont'd)	Documented In-House Methods identified by method number based on standard methods	
Milk powders and whey powders	Scorched particles	PEC.AGROPEC.175 based on American Dairy Products Institute Dairy Products Standards	Lab - AGROPEC
Dried Milk Whey Dried, Whey and Whey Butter, Cheese, Milk (liquid)	Fat (Milk fat in dry matter)	PEC.AGROPEC.159 (Gravimetric Method) based on ISO 23318/IDF 249:2022	Lab - AGROPEC
Milk (liquid)	Fat (Milk fat in dry matter)	PEC.AGROPEC.163 (Butyrometric Method)	Lab - AGROPEC
Cheese, Dried Cheese		ISO11870/IDF 152:2009, ISO3433/ IDF222:2008	Lab - AGROPEC
Dulce de Leche	Fat	ISO11870/IDF 152:2009, ISO3433/ IDF222:2008	Lab - AGROPEC
Dried Milk, Whey Powder	Acidity (titratable)	PEC.AGROPEC.043 based on: ISO 6091/IDF 86:2010	Lab - AGROPEC
Milk (liquid), Cream		PEC.AGROPEC.043 based on: AOAC Official Methods of Analysis 947.05:1947 2023 22nd Edition	Lab - AGROPEC
Dairy Products	Nitrogen (Protein by Calculation) Milk protein in milk solids not fat	PEC.AGROPEC.172 based on: ISO 8968-1/IDF 20-1:2014	Lab - AGROPEC
Cheese	pH	PEC.AGROPEC.177 based on: BS 770. Part 5:1976. British Standard Methods for Chemical Analysis of cheese Determination of pH value	Lab - AGROPEC
Dried Milk	Casein	PEC.AGROPEC.140 based on ISO 17997-1/IDF 29-1 2004	Lab - AGROPEC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
ANIMAL FEED, FOOD & FOOD PRODUCTS	Chemical Tests (cont'd)	Documented In-House Methods identified by method number based on standard methods	
Food (General)	Ash	PEC.AGROPEC.040 based on Kirk Ronald S., Sawyer R. Pearson's composition and analysis of foods. 9th edition, 1991, page.13	Lab - AGROPEC
Spices and condiments	Ash	ISO 928:1997	Lab - AGROPEC
Apple juice, concentrate, puree	Patulin	PEC.AGROPEC.080 Based on AOAC Official Method 995.10:1999, 2023 22nd Edition	Lab - AGROPEC
Foods and food products (excluding cereal and dairy products) which require drying under reduced pressure	Moisture	PEC.AGROPEC.109 by vacuum oven drying, based on ISO 1026:1982	Lab - AGROPEC
Krill	Moisture	ISO 6496:1999	Lab - AGROPEC
	Fat	PEC.AGROPEC.052 based on Blight and Dyer Canadian Journal of Biochemistry and Physiology Vol 37 pp 911917	Lab - AGROPEC
Honey	Hydroxymethyl-furfural	PEC.AGROPEC.197 based on Harmonised methods of the International Honey Commission 2009, chapter 5 Determination of hydroxymethylfurfural by HPLC	Lab - AGROPEC
Honey	Moisture	PEC.AGROPEC.004 refractometric method based on AOAC Official Methods of Analysis 969.38:1969 2023 22nd Edition	Lab - AGROPEC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
ANIMAL FEED, FOOD & FOOD PRODUCTS (cont'd)	Chemical Tests (cont'd)	Documented In-House Methods identified by method number based on standard methods	
Krill	Chlorides	PEC.AGROPEC.054 based on ISO 1841-1:1996	Lab - AGROPEC
	Total Volatile Nitrogen	PEC.AGROPEC.056 based On 920.02-1920	Lab - AGROPEC
	Free Fat	PEC.AGROPEC.115 According to ISO 1444:1996	Lab - AGROPEC
Honey	Total Acidity	PEC. AGROPEC.001 method based on AOAC Official Methods of Analysis 962.19:1977 2023 22nd Edition	Lab - AGROPEC
Sugar	Colour	PEC.AGROPEC.059 Based on - International Commission for Uniform Methods of Sugar Analysis / ICUMSA Methods Book. Berlin: Bartens, 2005, ICUMSA Supplement 2011	Lab - AGROPEC
MEAT AND MEAT PRODUCTS FOOD and ANIMAL FEED HONEY	Ash	PEC.AGROPEC.040 using muffle furnace based on ISO 936:1998 ISO 5984:2022 International honey commission 2009 method 3	Lab - AGROPEC
	Moisture	PEC.AGROPEC.037 air drying based on AOAC Official Methods of Analysis 950.46:1991 2023 22nd Edition	Lab - AGROPEC
	Nitrogen Moisture:protein ratio	PEC.AGROPEC.172 by Kjeldahl based on ISO 937:2023	Lab - AGROPEC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
ANIMAL FEED, FOOD, and FOOD PRODUCTS (cont'd)	Chemical Tests (cont'd)	Documented In-house Method identified by method number based on standard methods	
FRUIT and VEGETABLE PRODUCTS	Soluble Solids	PEC.AGROPEC.126 based on ISO 2173:2003	Lab - AGROPEC
	pH	PEC.AGROPEC.177 based on ISO 1842:1991	Lab - AGROPEC
Food and food products	Lactose	PEC.CROMA.004 based on AOAC Official method 977.20	Lab - CROMA
Krill	Biogenic Amines: Histamine, Cadaverine	PEC.CROMA.067 by HPLC/FLD based on AOAC 992.23, 2023,22nd edition	Lab - CROMA
Fruit, fruit juices and vegetables	Pesticide residues as given in tables at end of Schedule Table 1 Pesticides by GC-ECD Table 2 Pesticides by GC-MS Table 3 Pesticides by LC-FLD Table 4 Pesticides by LCMS/MS Table 5 Pesticides by GCMS/MS	PEC.CROMA.019 based on QuEChERS extraction and gas chromatography electron capture detection (GC-ECD), gas chromatography mass spectrometry and/or tandem mass spectrometry (GC-MS; GC-MS/MS) and highperformance liquid chromatography using fluorescence detection (LCFLD) and/or tandem mass spectrometry (LC-MS/MS)	Lab-CROMA
Milk and whey	Chlorate and perchlorate	PEC.CHROM.060 using matrix dispersive extraction (QuPPe) and LC-MS/MS	Lab-CROMA

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Cereals, Oilseeds and by products, Derived products and foodstuffs	Crude Protein – Combustion Method	PEC.CEMIC.CER.210 / AOAC 992.23,2019,21st edition	Lab - CEMIC
Cereals, oilseeds and their products	Moisture	PEC.CEMIC.001 ISO 712:2024 ISO665:2020 ISO 6540 2021 EBC 3.2 1997 EBC 4.2 2000 AACC 44-15A 1999 10TH Ed 2000 AOCS Ac 2-41:2017	Lab - CEMIC
FOODS, GRAINS AND CEREAL PRODUCTS	Water activity	PEC.CEMIC.CER.501/ ISO 18787:2017	Lab - CEMIC
Cereals, cereal products, Oilseeds and by products,	Crude Protein – Kjeldahl method	PEC.CEMIC.003 based on ISO 5983-1:2005/Cor.1:2008, ISO 20483:2013, EBC 3.3.1 2004 and 4.3.1:2004	Lab - CEMIC
FOOD & FOOD PRODUCTS (Cont'd)	<u>Chemical and Physical Tests</u>	Documented In-House Methods identified by method number based on Standard methods	
RICE	Classification of Rice: Broken grains Chalky grains Impurities (Foreign Matter) Paddy grains Red rice Stained grains	PEC.CEMIC.CER.010 based on Decreto MGAP No 544/987and 321/988	Lab - CEMIC
Rice quality testing	Brown Rice, Mill Rice, Broken grains, Colour SATAKE, Head rice yield.	PEC.CEMIC.CER.009 / Decreto MGAP Nº 544/987 y 321/988	Lab - CEMIC

Cereals, oilseeds and their products	Extractable matter (Fat) Fat Oil content	PEC.CEMIC.CER.504 using Soxtec solvent extraction system based on ISO 11085:2015, ISO 659:2009	Lab - CEMIC
Oils and Fats (Grease)	Peroxide Index	PEC.CEMIC.CER. 401 based on AOCS Cd 8B90:2017 and ISO 3960:2017	Lab - CEMIC
Oils and Fats (Grease)	Specific UV extinction at 232nm and 268nm	PEC.CEMIC.CER.423 based on AOCS Ch5-91:2018 and COI/T20/DocNo 19	Lab - CEMIC
Oils and Fats (Grease)	Free Fatty Acids	PEC.CEMIC.CER. 402 based on AOCS Ca 5a-40: 2017 and COI/T.20/Doc.Nº3 4 and ISO 660:2020	Lab - CEMIC
Oils and Fats (Grease)	Moisture	PEC.CEMIC.CER. 406 based on ISO 662:2016	Lab - CEMIC
Dairy products including Cheese, Milk, Milk powders, Liquid Dairy Products (flavoured milks, yoghurt) and dairy desserts (pudding)	Aflatoxin M_1	PEC.AGROPEC.075 Extraction using immunoaffinity column clean up. HPLC based on ISO14501:2021 using fluorescence detection	Lab - AGROPEC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOOD & FOOD PRODUCTS (Cont'd)	<u>Chemical and Physical Tests</u>	Documented In-House Methods identified by method number based on standard methods	
Nuts, Grains and Dried Fruit including By-products and Finished products for all. Animal Feeds	Aflatoxin B_1, B_2, G_1, G_2	PEC.AGROPEC.053 based on immunoaffinity column clean up. HPLC based on AOAC Official Methods of Analysis 991.31:1994 and 994.08: 1997, 2023 22nd Edition using HPLC and fluorescence detection	Lab - AGROPEC
Grains including Byproducts and Finished products, Animal Feeds	Deoxynivalenol (DON)	PEC. AGROPEC.063 extraction based on AOAC Official Methods of Analysis, 986.17:1990 2019, 2023 22nd Edition or Immunoaffinity column clean up. HPLC based on Journal of Association of Official Analytical Chemists 70(3), 1987, 479-483 using PDA detection	Lab - AGROPEC
Nuts, Grains and Dried Fruit, including By-products and Finished products for all. Coffee, Grapes and Animal Feeds, Condiments	Ochratoxin A	PEC.AGROPEC.076 based on immunoaffinity column clean up HPLC based on Analytica Chimica Acta 566 2006:117-121 using HPLC and fluorescence detection	Lab - AGROPEC
Edible Iodized Salt	Iodine	PEC.PQAR.910 by titration based on Rosin J, 1967. Reagent Chemicals and Standards. Potassium Iodate, pgs. 383-384. D. Van Nostrand Company Inc., 5th ed. New York	Lab - PQAR
Olive Oil	Stigmasta-3,5-diene	PEC.COMB.026 based on AOAC Method Cd 26-96, 2017 7th Edition	Lab - COMB

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOOD & FOOD PRODUCTS (Cont'd)	<u>Chemical Tests</u>	Documented In-House Methods identified by method number based on Standard Methods	
Chocolate	Triglycerides (CBE), milk fat and total fat	PEC COMB.030 according to EUR 22666 EN:2007, EUR 20685 EN:2003, EUR 20831 EN:2003	Lab - COMB
Herbs	Arsenic, Cadmium and Lead	PEC.ESPEC.014 based on US FDA Method 4.4 Version 1.1:2015 using Inductively Coupled Plasma-Atomic Emission Spectrometric Determination using Block and Microwave Assisted Digestion	Lab - ESPEC
	Mercury	PEC.ESPEC.010 based on FDA 4.7 version 1.2 (2020) And ISO 12846:2012	Lab - ESPEC
Food and Food Products	Arsenic, Cadmium and Lead	PEC.ESPEC.022 based on US FDA Method 4.7 Version 1.2:2020 using Inductively Coupled Plasma-Mass Spectrometric Determination using Block and Microwave Assisted Digestion	Lab - ESPEC
Bakery products fortified with iron	Iron	PEC.ESPEC.014 based on AOAC Official Method 2011.14 using Block and Microwave Assisted Digestion and Inductively Coupled Plasma-Optical Emission Spectrometry	Lab - ESPEC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOOD & FOOD PRODUCTS (Cont'd)	<u>Chemical Tests</u>	Documented In-House Methods identified by method number based on Standard methods	
Candies and sugar products, Citrus fruits	Copper	PEC.ESPEC.022 based on US FDA Method 4.7 Version 1.2:2020 Inductively Coupled Plasma-Mass Spectrometric using Block and Microwave Assisted Digestion	Lab - ESPEC
Food and Food products	Sodium	PEC.ESPEC.014 based on AOAC Official Method 2011.14 using Block and Microwave Assisted Digestion and Inductively Coupled Plasma-Optical Emission Spectrometry	Lab - ESPEC
	<u>Molecular Tests</u>		
Krill	Detection of ruminant DNA	PEC.MIC.068 using the DNAeasy kit or R-Biopharm SureFood PREP Advanced Kit for extraction, Amplification and detection Using the Thermo Scientific Rapid Finder Ruminant DNA Kit DNAnimal Screen Ruminant and Biorad RTPCR CFX 96	Lab - MIC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOOD & FOOD PRODUCTS including dairy products, meat and meat products and ready to eat foods, unless otherwise stated	<u>Microbiological Tests</u> Detection: *Listeria* spp	Documented In-House Methods identified by method number based on standard methods PEC.MIC.022 based on ISO 11290-1: 2017 (retaining 48h incubation of selective enrichment broths)	 Lab - MIC
	Listeria monocytogenes	PEC.MIC.022 based on ISO 11290-1: 2017 (retaining 48h incubation of selective enrichment broths)	Lab - MIC
	Listeria monocytogenes	PEC.MIC.066 using selective culture enrichment and presumptive detection by iQCheck Prep System for Automated DNA Extraction and manual extraction by real time PCR using Bio-Rad system, AOAC RI 010802, with biochemical confirmation using PEC.MIC.022 if required	Lab - MIC
	Listeria monocytogenes	PEC.MIC.026 using selective culture enrichment and presumptive detection by real time PCR using Dupont Qualicon BAX PCR system, AOAC RI 121402 with confirmation using PEC.MIC.022 if required	Lab - MIC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOOD & FOOD PRODUCTS including dairy products, meat and meat products and ready to eat foods, unless otherwise stated (cont'd)	<u>Microbiological Tests</u> (cont'd) Detection: (cont'd)	Documented In-House Methods identified by method number based on standard methods	
Dairy Products	*Listeria monocytogenes*	PEC.MIC.026 using selective culture enrichment and presumptive detection by real time PCR using Dupont Qualicon BAX PCR system, AOAC RI 121402 with biochemical confirmation using PEC.MIC.022 (performed at Lab –MIC if required)	Lab - MICFB
	Salmonella spp	PEC.MIC.023 based on ISO 6579-1:2017+A1:2020	Lab - MIC
	Salmonella spp	PEC.MIC.065 using selective culture enrichment and presumptive detection by iQCheck Prep System for Automated DNA Extraction and manual extraction by real time PCR using Bio-Rad system by real time PCR AOAC OMA 2017.06 PTM 010803, with serological and biochemical confirmation using PEC.MIC.023 if required	Lab - MIC
Food & Food Products	*Salmonella* spp	PEC.MIC.024 using selective culture enrichment and presumptive detection by real time PCR using Dupont Qualicon BAX PCR System, AOAC OMA Official methods No 2013.02, with serological and biochemical confirmation using PEC.MIC.023 if required	Lab - MIC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOOD & FOOD PRODUCTS including dairy products, meat and meat products and ready to eat foods, unless otherwise stated (cont'd)	Microbiological Tests (cont'd) Detection: (cont'd)	Documented In-House Methods identified by method number based on standard methods	
Dairy Products	*Salmonella* spp	PEC.MIC.024 using selective culture enrichment and presumptive detection by real time PCR using Dupont Qualicon BAX PCR System, AOAC OMA Official methods No 2013.02, with serological and biochemical confirmation using PEC.MIC.023 i (performed at Lab –MIC if required)	Lab - MICFB
Meat and Meat Products and Poultry	Presumptive *Escherichia coli* O157 H7 and Presumptive *E. coli* O157:H7/NM	PEC.MIC.067 using selective culture enrichment and presumptive detection by iQCheck Prep System for Automated DNA Extraction and manual extraction by real time PCR using Bio-Rad system by real time PCR and AOAC RI 020801	Lab - MIC
Meat and Meat Products and Poultry	Presumptive *Escherichia coli* O157 H7 and Presumptive *E. coli* O157:H7/NM	PEC.MIC.027 using selective culture enrichment and presumptive detection by real time PCR using Dupont Qualicon BAX PCR system and AOAC RI 031002	Lab – MIC
Meat and Meat Products and Poultry	Confirmation of *Escherichia coli* O157:H7	PEC.MIC.032 using Biochemical and Serological tests based on Health Canada MFHPB-10 (2017) after presumptive detection using method PEC.MIC.067 or PEC.MIC.027 Real Time PCR	Lab - MIC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOOD & FOOD PRODUCTS including dairy products, meat and meat products and ready to eat foods, unless otherwise stated (cont'd)	Microbiological Tests (cont'd) Detection: (cont'd)	Documented In-House Methods identified by method number based on standard methods	
Raw meat	Shiga Toxin-Producing *Escherichia coli* (STEC) by detection of STX1, STX2 and EAE gene sequences in serogroups O26, O45, O103, O111, O121, O157 and O145	PEC.MIC.064 and PEC.MIC.049 based on USDA FSIS MLG 5C.03 by iQ-Check Prep System for Automated DNA Extraction and manual extraction by real time PCR using Bio-Rad system AOAC RI 121203 screening using iQ-Check STEC VirX and confirmation of serogroups using iQCheck STEC SerO II Kit	Lab - MIC
Raw meat	Shiga Toxin-Producing *Escherichia coli* (STEC) by detection of STX1, STX2 and EAE gene sequences in serogroups O26, O45, O103, O111, O121, O157 and O145	PEC.MIC.043 and PEC.MIC.049 based on USDA FSIS MLG 5C.03 using BAX real-time PCR system for screening AOAC RI 091301 and confirmation; immunomagnetic separation (IMS) for specific serogroups; culture on modified Rainbow agar; DEC confirmation PCR kit for STX1, STX2 and EAE with visualisation using gel electrophoresis; API20E	Lab - MIC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOOD & FOOD PRODUCTS including dairy products, meat and meat products and ready to eat foods, unless otherwise stated (cont'd)	Microbiological Tests (cont'd) Enumeration:	Documented In-House Methods identified by method number based on standard methods	
	Aerobic colony count at 35 □C for 48h	PEC.MIC.029 based on APHA Compendium of Methods for the Microbiological Examination of Foods, 5th Edition, 2015	Lab - MIC
	Aerobic colony count	PEC.MIC.038 using Biomerieux TEMPO AC (AOAC tested Method Certificate Nº121204)	Lab - MIC
	Aerobic colony count at 30 □C for 72h	PEC.MIC.029 based on ISO 4833-1:2013+A1:2022	Lab - MIC
Dairy products	Aerobic colony count at 30 □C for 72h	PEC.MIC.029 based on ISO 4833-1:2013+A1:2022	Lab - MICFB
Dairy Powder Products	Aerobic colony count at 35°C	PEC.MIC.029 based on Compendium of Methods for the Microbiological Examination of Foods, 5th edition, 2015	Lab - MICFB
FOODS including cereals products, dairy products and ready to eat foods	*Bacillus cereus* (presumptive)	PEC.MIC.025 based on ISO 7932:2004 and Amd 2020	Lab - MIC
	Total Coliforms	PEC.MIC.036 using Biomerieux TEMPO TC (AFNOR BIO 12/17-12/05)	Lab - MIC
	Total Coliforms and Thermotolerant (Faecal) Coliforms	PEC.MIC.028 using MPN based on APHA Compendium of Methods for the Microbiological Examination of Foods 5th Edition, 2015	Lab - MICFB
	Total Coliforms	PEC.MIC.059 based on ISO 4832:2006	Lab - MIC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOOD & FOOD PRODUCTS including dairy products, meat and meat products and ready to eat foods, unless otherwise stated (cont'd)	Microbiological Tests (cont'd) Enumeration: (cont'd)	Documented In-House Methods identified by method number based on standard methods	
	Total Coliforms and Thermotolerant (Faecal) Coliforms and *Escherichia coli*	PEC.MIC.028 using MPN Based on APHA Compendium of Methods for The Microbiological Examination of Foods 5th Edition, 2015	Lab - MIC
Milk Powder	Enterobacteriaceae	PEC.MIC.031 based on ISO 21528-2:2017	Lab - MICFB
	Enterobacteriaceae	PEC.MIC.031 based on ISO 21528-2: 2017	Lab - MIC
Red meat	Enterobacteriaceae	PEC.MIC.039 using Biomerieux TEMPO EB (AOAC tested Method Certificate Nº050801)	Lab - MIC
Chicken (processed)	*Listeria monocytogenes*	PEC.MIC.035 based on ISO 11290-2 2017	Lab - MIC
Food and food products	Coagulase-positive Staphylococci	PEC.MIC.020 based on APHA Compendium of Methods for the Microbiological Examination of Foods, 5th Edition, 2015 and ISO 6888-1:2021 +A1:2023	Lab - MIC
Milk Powder	Coagulase positive Staphylococci	PEC.MIC 020 based on APHA Compendium of Methods for the Microbiological Examination of Foods, 5th Edition, 2015 and ISO 68881:2021+A1:2023	Lab - MICFB

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
FOOD & FOOD PRODUCTS including dairy products, meat and meat products and ready to eat foods, unless otherwise stated (cont'd)	Microbiological Tests (cont'd) Enumeration: (cont'd)	Documented In-House Methods identified by method number based on standard methods	
(excluding Cheese Products)	Coagulase positive Staphylococci	PEC.MIC.044 based on Petri-film method AOAC 2003.07, 2003.08 and 2003.11	Lab - MIC
Milk Powder	Coagulase positive Staphylococci	PEC.MIC.044 based on Petri-film method AOAC 2003.07, 2003.08 and 2003.11	Lab - MICFB
	Yeast and Moulds	PEC.MIC.058 based on Petri-film method AOAC 997.02 and APHA Compendium of Methods for The Microbiological Examination of Foods, 5th Edition, 2015, chapter 21.2	Lab - MIC
Dairy products	Yeast and Moulds	PEC.MIC.048 based on ISO 6611.2004	Lab - MIC
Foods with aw<0.95	Yeast and Moulds	PRC.MIC.048 based on ISO 21527-2:2008	Lab - MIC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
ENVIRONMENTAL SAMPLES (sponge swabs)	Microbiological Tests (cont'd) Detection:	Documented In-House Methods identified by method number based on standard methods	
	Listeria monocytogenes	PEC.MIC.066 using selective culture enrichment and presumptive detection by iQCheck Prep System for Automated DNA Extraction and manual extraction by real time PCR using Bio-Rad system, AOAC RI 010802, with biochemical confirmation using PEC.MIC.022 if required	Lab - MIC
	Listeria monocytogenes	PEC.MIC.026 using selective culture enrichment and presumptive detection by real time PCR using Dupont Qualicon BAX PCR system, AOAC RI 121402 with confirmation using PEC.MIC.022 if required	Lab - MIC
	Salmonella spp	PEC.MIC.065 using selective culture enrichment and presumptive detection by iQCheck Prep System for Automated DNA Extraction and manual extraction by real time PCR using Bio-Rad system by real time PCR AOAC 010803 RI, with serological and biochemical confirmation using PEC.MIC.023 if required	Lab - MIC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
ENVIRONMENTAL SAMPLES (sponge swabs) (cont'd)	Microbiological Tests (cont'd) Detection: (cont'd)	Documented In-House Methods identified by method number based on standard methods	
	Salmonella spp	PEC.MIC.024 using selective culture enrichment and presumptive detection by real time PCR using Dupont Qualicon BAX PCR System, AOAC OMA Official methods No 2013.02, with serological and biochemical confirmation using PEC.MIC.023 if required	Lab - MIC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATER and EFFLUENTS	<u>Chemical and Physical Tests</u>		
Potable water	Anion: Bromate	PEC.PQAR.113 by ion chromatography based on EPA 300.1:1997	Lab - PQAR
Fresh surface water, wastewater, effluents	Anions: Chlorate	PEC.PQAR.113 by ion chromatography based on EPA 300.1:1997	Lab - PQAR
Fresh surface water, groundwater, potable water	Anions: Fluoride, Chloride, Nitrate, Sulphate	PEC.PQAR.113 by ion chromatography based on ISO 10304-1:2007	Lab - PQAR
Freshwater (surface & ground water)	Anions: Nitrite	PEC.PQAR.113 by ion Chromatography based on EPA 300.1-1997	Lab - PQAR
	Alkalinity (total)	PEC.PQAR.105 by titration based on ASTM D1067-16	Lab - PQAR
	Hardness (total)	PEC.PQAR.106 by titration based on APHA, 2023, 24th Edition, 2340-C	Lab - PQAR
Fresh surface water, groundwater, potable water, wastewater, effluents	pH	PEC.PQAR.601 by electrode based on APHA, 2023, 24th Edition, 4500_H & ASTM 1293-12	Lab - PQAR
	Conductivity	PEC.PQAR.112 by electrode based on ISO 7888:1985 and APHA, 2023, 24th Edition, 2520-A&B	Lab - PQAR
	Cyanides (total and free)	PEC.PQAR.602 by spectrometry based on EPA 335.4:1993, APHA, 2023, 24th Edition 4500-CN E	Lab - PQAR
	Extractable matter (by solvent)	PEC.PQAR.007 based on APHA, 2023, 24th Edition, 5520-D	Lab - PQAR

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATER and EFFLUENTS (cont'd)	Chemical and Physical Tests (cont'd)	Documented In-House Methods identified by method number based on standard methods	
Fresh surface & ground Water, potable water, Wastewater, effluents	Phenols	PEC.PQAR.603 based on EPA 420.1:1978	Lab - PQAR
	Total suspended solids	PEC.PQAR.006 by gravimetry based on APHA, 2023, 24th Edition, 2540-D	Lab - PQAR
	Total dissolved solids	PEC.PQAR.004 by gravimetry based on APHA, 2023, 24th Edition, 2540-C	Lab - PQAR
	Total solids	PEC.PQAR.003 by gravimetry based on APHA, 2023, 24th Edition, 2540-B	Lab - PQAR
	Settleable solids	PEC.PQAR.002 by gravimetry based on APHA, APHA, 2023, 24th Edition, 2540-F	Lab - PQAR
Freshwater (surface & Ground water), effluents	Total Kjeldahl Nitrogen	PEC.PQAR.618 by flow Injection analysis based on EPA Method 351.2	Lab - PQAR
Fresh surface water, wastewater, effluents	Absorbable Organic Halogens (AOX)	PEC.PQAR.604 based on ISO 9562:2004	Lab - PQAR
	Total Nitrogen (TN)	PEC.PQAR.606 by combustion-oxidation based on ISO 11905-2:1997	Lab - PQAR
Wastewater, effluents	Biochemical Oxygen Demand	PEC.PQAR.010 by manometric monitoring based on APHA, 2023, 24th Edition, 5210-D app. 2016	Lab - PQAR
Fresh surface water, groundwater, wastewater, effluents	Colour	PEC.MAFB.011 based on ISO 7887:2011, APHA, 2023, 24th Edition. Standard Method 2120B & ASTM D 1209-05 (2011)	Lab - MAFB

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS and EFFLUENTS (cont'd)	Chemical Tests (cont'd)	Documented In-House Methods identified by method number based on standard methods	
	Conductivity	PEC.MFAB.112 using Conductivity meter based on ISO 7888:1985	Lab - MAFB
	pH	PEC.MAFB.001 using pH meter based on APHA, 2023, 24th Edition. Standard Method 4500 H+ B, app. 2000 Rev. 2011 & ASTM D 1293-18	Lab - MAFB
	Soluble Phosphorus	PEC.MAFB.014 by spectrophotometry based on ISO 6878:2004	Lab - MAFB
	Total suspended solids	PEC.MAFB.006 by gravimetry based on APHA, 2023, 24th Edition, 2540-D equivalent to ISO 11923:1997	Lab - MAFB
Wastewater, effluents	Biochemical Oxygen Demand	PEC.MAFB.010 by manometric monitoring based on APHA, 2023, 24th Edition, 5210-D, app. 2016	Lab - MAFB
Fresh surface water, groundwater, wastewater, effluents	Chemical Oxygen Demand	PEC.MAFB.009 by sealedtube methodology based on ISO 15705:2002	Lab - MAFB
Potable, fresh surface, groundwaters and Wastewater Effluents	Mercury	PEC.ESPEC.010 based on ISO 15587-2 Annex C ISO12846:2012	Lab - ESPEC
Potable, fresh surface, groundwaters	Cadmium, Lead	PEC.ESPEC.022 based on ISO 17294-2:2023 using ICP-MS	Lab - ESPEC

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS	Chemical Tests (cont'd)	Documented In-House Methods identified by method number based on standard methods	
Potable, fresh surface and groundwaters	Cadmium, Chromium, Lead, Nickel,	PEC.ESPEC.012 using graphite furnace AAS based on ISO 15586:2003	Lab - ESPEC
	Aluminium, Barium, Boron, Calcium, Copper, Iron, Magnesium, Manganese, Potassium, Sodium & Zinc	PEC.ESPEC.014 using ICPOES based on ISO 11885:2007	Lab - ESPEC
Effluents	Arsenic, Cadmium, Copper, Chromium, Lead, Nickel, Zinc, Aluminium, Sodium, Selenium, Iron, Vanadium	PEC.ESPEC.014 using ICPOES based on ISO 11885:2007	
Potable, fresh surface and groundwaters	Organochlorine Pesticides: Aldrin Trans-chlordane Chlorpyrifos o,p-DDD p,p-DDD Dieldrin Alpha-endosulfan Beta-endosulfan Endosulfan sulphate Endrin Ethion Beta-HCH Heptachlor Heptachlor epoxide Hexachlorobenzene Lindane (γ-HCH) Malathion Methoxychlor Mirex Trans-nonachlor	PEC.CROMA.001 using GC-ECD and GC-MS based on UNE-EN-ISO 6468:1996	Lab - CROMA

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS & EFFLUENTS (cont'd)	Chemical Tests (cont'd)	Documented In-house Methods identified by method number based on standard methods	
Potable, fresh surface, groundwaters and Wastewater, Effluents	Polycyclic aromatic hydrocarbons (PAH)	PEC.CROMA.043 by GC-MS/MS	Lab - CROMA

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS and EFFLUENTS	<u>Microbiological Tests</u> <u>Detection:</u>	Documented In-house Methods identified by method number based on standard methods	
Potable	Coliforms Thermotolerant coliforms *Escherichia coli*	PEC.MIC.072 based on Standard methods for the Examination of water and Waste Water APHA, 23rd Edition, Method 9221 D, E and G.2 using a single tube method with confirmation by indole production, as required by UNIT 833	Lab - MIC
	Pseudomonas aeruginosa	PEC.MIC.073 based on UNIT 942 as required by UNIT 83, using a single tube method and Asparagine broth	Lab - MIC
Potable, including mineral water, fresh surface and groundwater	Total aerobic colony count	PEC.MIC.018 based on Standard methods for the examination of water and wastewater APHA, 23rd Edition, Method 9215 A and B (approved 2016)	Lab - MIC & Lab - MICFB
Potable, including mineral water, fresh surface and groundwater and wastewater effluents	Coliforms Thermotolerant coliforms *Escherichia coli* (presumptive)	PEC.MIC.030 incorporating ISO 9308-2:1990 using MPN technique to meet national requirements	Lab - MIC & Lab - MICFB
Potable, including mineral water	Total coliforms *Escherichia coli* (presumptive)	PEC.MIC.016 using Endo Agar based on Standard methods for the examination of water and wastewater APHA, 23rd Edition, Method 9222B (approved 2015) using membrane filtration technique	Lab - MIC & Lab - MICFB

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS and EFFLUENTS (Cont'd)	<u>Microbiological Tests</u> Enumeration:	Documented In-house methods identified by method number based on standard methods	
Potable & Groundwater	*Escherichia coli*	PRC.MIC.074 using Endo agar based on Standard methods for the examination of water and wastewater APHA 21st Edition, Method 9222 B and G using membrane filtration and confirmation NA-MUG	Lab - MIC
Sea water, fresh surface waters, groundwater and effluents	Thermotolerant (faecal) coliforms	PEC.MIC.016 using mFC Agar based on Standard methods for the examination of water and wastewater APHA, 23rd Edition, Method 9222D (approved 2015) using membrane filtration technique	Lab - MICFB
Potable, including bottled and mineral waters, and groundwater, including boreholes and wells	*Pseudomonas aeruginosa*	PEC.MIC.034 based on Standard methods for the examination of water and wastewater APHA, Method 9213 E (approved 2007)	Lab - MIC & Lab - MICFB

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS and EFFLUENTS (Cont'd)	Biological Toxicity Test	Documented In-House Methods identified by method number based on standard methods	
Fresh surface water, wastewater, effluents	Determination of toxicity using Daphnia magna immobilisation test (ED50) or lethality test (LC)	PEC.PQAR.607 based on EPS1/RM/14 Environmental Protection Series. Environment Canada, Ottawa, 2nd Edition, December 2000	Lab-PQAR
Effluents	Determination of Toxicity using *Pimephales promelas* lethal concentration (LC50) test, or half maximal effect concentration (EC50) test	PEC.PQAR616 based on EPA-821-R-02-012. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms. Fifth Edition, October 2002	Lab-PQAR
SEDIMENTS	Biological Tests		
River and Estuary Sediments	Biomass determination, identification and enumeration of benthic invertebrates to family level	PEC.MAM.200 based on USA EPA/620/R-95/008, 1995 Environmental Monitoring Assessment programme Laboratory Manual - Volume 1: Biological and Physical Analysis	Lab - PQAR

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS and SEDIMENTS	Sampling	Documented In-House Methods identified by method number based on standard methods	
Surface estuary and fresh waters	Collection of samples for biological examination (plankton)	PRD.MUA.007 qualitative and quantitative using a variety of sampling equipment as described in ITR.MUA 200 and 201 based on Standard Methods for the Examination of Water and Wastewater - APHA 23rd Edition, 2017, Part 10200	Site (Environmental - MUA)
Surface estuary and fresh waters	Collection of samples for microbiological analysis	ITR.MIC.061 and ITR.MUA.205 based on Standard Methods for the Examination of Water and Wastewater - APHA Part 9060A 2006	Site (Environmental - MUA)
Surface estuary and fresh waters	Collection of samples for physicochemical analysis	PRD.MUA.007 based on ISO 5667-6	Site (Environmental MUA)
River and Estuary Sediments	Collection of grab samples for physicochemical analysis	PRD.MUA.005 based on ASTM E1391-03 (Reapproved 2014)	Site (Environmental – MUA)
	Collection of grab samples for biological examination, benthic invertebrates	PRD.MUA.005 based on ASTM E1391-03 (Reapproved 2014)	Site (Environmental - MUA)
Surface estuary and fresh waters	In-situ determination of temperature, pH, conductivity & dissolved oxygen (DO)	PEC.MUA.300 using multiparameter probes	Site (Environmental - MUA)

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
ATMOSPHERIC POLLUTANTS AND EFFLUENTS – STACK GAS SAMPLES	<u>Physical Testing</u>	National, International and other recognised standards using documented In-House work instructions	
Filter Papers and Rinse Solutions	Weighing of Particulate Matter	PEC.MAM.CAE.004 based on EN 13284-1:2017	Lab - MAM
Testing of Stack Emissions to Atmosphere	<u>Sampling</u> (with subsequent analysis by an ISO/IEC 17025 accredited laboratory)	National, International and other recognised standards using documented In-House work instructions to meet the requirements of EN 15259:2007	
	Total Particulate Matter	PEC.MAM.CAE.004 based on EN 13284-1:2017	Site - MAM
	<u>Sampling and On-Line Analysis</u>		
	Pressure, Temperature and Velocity (Point Velocity Method to support measurement of total particulate matter)	PEC.MAM.CAE.004 based on PD CEN/TR 17078:2017 / EN 16911-1:2013	Site - MAM
TOYS AND TOY PACKAGING	<u>Chemical Tests</u>		
	Migration of certain elements: Arsenic Barium Antimony Cadmium Chromium Lead Selenium Mercury	PEC.ESPEC.024 based on Mercosur Standard NM-3003:2002 – Safety of toys – migration of certain elements using ICP-OES and ICP-MS and, for mercury determination CVAAS	Lab - ESPEC
END			

Table 1 - Pesticides by GC-ECD - Fruit, fruit juices and vegetables			
Aldrin	Alpha-Endosulfan	alpha-HCH	Beta-Endosulfan
beta-HCH	Cypermethrin	Chlorothalonil	Chlorpyrifos
Chlorpyrifos-methyl	delta-HCH	Deltamethrin	Diazinon
Dieldrin	Endrin	Ethion	Heptachlor
Heptachlor Epoxide B	Imazalil	Lambda-Cyalothrin	Lindane
Malaoxon	Malathion	op-DDT	Parathion-ethyl

Parathion-methyl pp-DDT	Permethrin Prochloraz	pp-DDD Sulfate-endosulfan	pp-DDE

Table 2 - Pesticides by GC-MS - Fruit, fruit juices and vegetables			
Aldrin Beta-Endosulfan Chlorpyrifos-methyl Dimethoate Fenthion Lindane Opp (2-Pheniphenol) Pyrimethanil pp-DDT Thiabendazole (TBZ)	Alpha-Endosulfan beta-HCH delta-HCH Endrin Heptachlor Malathion Parathion-ethyl Pirimiphos-methyl Prochloraz	alpha-HCH Chlorothalonil Diazinon Ethion Heptachlor Epoxide B Methidathion Parathion-methyl pp-DDD Propiconazole	Azinphos-methyl Chlorpyrifos Dieldrin Fenitrothion Lambda-Cyalothrin op-DDT Permethrin pp-DDE Sulfate-endosulfan

Table 3 - Pesticides by LC-FLD - Fruit, fruit juices and vegetables			
2-Phenifenol Thiabendazole			

Table 4 - Pesticides by LC-MS/MS – Fruit, fruit juices & vegetables			
Acetamiprid Azoxystrobin Carbaryl Cyproconazole Chlorfenvinphos Coumaphos Diclosulam Edifenphos Fenthion Fluxapyroxad Imazalil Kresoxim-methyl Methalaxil Methiocarb Sulfone Methoxyfenozide Parathion-ethyl Pyraclostrobin Pirimiphos-ethyl Profenofos Propiconazole Tebuconazole Tricyclazole Triticonazole	Acetochlor Bifenthrin Carbendazim Cyprodinil Chlorimuron-etyl Deltamethrin Difenoconazole Ethion Fipronil Phosalone Imidachloprid Lambda-Cyalothrin Methamidophos Metiocarb Sulfoxide Metsulfuron-methyl Parathion-methyl Pyrazosulfuron-ethyl Pirimiphos-methyl Profoxydim Saflufenacil Thiabendazole (TBZ) Trichlorfon	Atrazine Boscalid Carbofuran Clomazone Chlorpyrifos Diazinon Diflubenzuron Fenbuconazole Florpyrauxifen-benzyl Phosmet Iprodione Malaoxon Methidathion Metolachlor Omethoate Penoxsulam Pyrimethanil Pyriproxyfen Propanil Simazine Thiacloprid Trifloxystrobin	Azinphos-methyl Buprofezin Cypermethrin Chlorantraniliprole Chlorpyrifos-methyl Dichlorvos Dimethoate Fenhexamid Fludioxonil Hexythiazox Isoprothiolane Malathion Methiocarb Methomyl Opp (2-Pheniphenol) Permethrin Pirimicarb Prochloraz Propetamphos Spinosad Thiamethoxam Triflumuron

Table 5 - Pesticides by GC-MS/MS – Fruit, fruit juices & vegetables			
Acetochlor Atrazine Bifenthrin Carbofuran Cyprodinil	Aldrin Azinphos-methyl Boscalid Cifluthrin Cis chlordane	Alpha-Endosulfan Beta-Endosulfan Buprofezin Cypermethrin Cis nonachlor	alpha-HCH beta-HCH Carbaryl Cyproconazole Chlorfenvinphos

Chlorothalonil delta-HCH Dichlorvos Dimethoate Fenbuconazole Fenthion Phosalone Heptachlor Epoxide B Lambda-Cyalothrin Methalaxil Metoxichlor op-DDT Parathion-methyl Pirimiphos-ethyl pp-DDE Propanil Sulfate-endosulfan Tricyclazole	Chlorpyrifos Deltamethrin Dicofol Edifenphos Fenchlorphos Fenvalerate Phosmet Iprodione Lindane Methidathion Mirex Opp (2-Pheniphenol) Permethrin Pirimiphos-methyl pp-DDT Propetamphos Tebuconazole Trifloxystrobin	Chlorpyrifos-methyl Diazinon Dieldrin Endrin Fenhexamid Fipronil HCB Isoprothiolane Malaoxon Methiocarb op-DDD Oxiclordane Pyrimethanil Pyriproxyfen Procymidone Propiconazole Trans chlordane	Coumaphos Diclofenthion Difenoconazole Ethion Fenitrothion Fludioxonil Heptachlor Kresoxim-methyl Malathion Metolachlor op-DDE Parathion-ethyl Pirimicarb pp-DDD Profenofos Simazine Trans nonachlor
END			