

# Schedule of Accreditation



Organisation Name	ALS Life Sciences Ltd
Trading As	
INAB Reg No	166T
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Accreditation Standard	ISO 17025 T
Date Initially Awarded	04/07/2005
Scope Classification	Biological and veterinary testing
Scope Classification	Chemical testing
Services available to the public	Yes

Refer to document on interpreting INAB Scopes of Accreditation

Sites from which accredited services are delivered		
(the detail of the accredited services delivered at each site are on the Scope of Accreditation)		
	Name	Address
1	ALS	Carrigeen Business Park, Clonmel, Tipperary, E91 PF63
2	Head Office	ALS Life Sciences Limited trading as ALS, 33 Eastgate Drive, Little Island, Cork, T45C446

# Scope of Accreditation

## ALS

### Biological and Veterinary Testing

Category: A

Biology/veterinary field - Tests	Test name	Technique	Matrix	Equipment	Std. reference	
803 Culture of organisms in liquid or agar based culture media with visual or instrument monitoring for growth - .01 Culture of bacteria	Aerobic colony count (48 hours)	Culture of bacteria	Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and	N/A	SP048 based on EN ISO 4833-1: 2013	

			poultry Non-alcoholic beverages Nuts and nut products, snacks Pet foods Prepared dishes Product contact surfaces Production animals Soups, broths and sauces Surfaces			
	Aerobic colony count (72 hours)		Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and poultry Non-alcoholic beverages Nuts and nut products, snacks Pet foods	N/A	SP030 based on EN ISO 4833-1: 2013	

		Prepared dishes Product contact surfaces Production animals Soups, broths and sauces Surfaces			
Coliforms and E.coli Filters/Membrane Filtration	Membrane Filtration	Waters - Environmental water Waters - Industrial Waters - Potable water Waters - Swimming pools and spas Waters - Trade waste Waters - Waste water treatment plant effluent (WWTP effluent)	N/A	SP217 based on EN ISO 9308-1:2014 A1:2016	
Counting of Air Settle Plates by TVC or Yeasts and Moulds	Culture of bacteria	Air	N/A	SP197 based on an In House method	
Detection and Enumeration of Pseudomonas aeruginosa	Membrane Filtration	Non-alcoholic beverages	N/A	SP084 based on ISO 16266:2006	
		Waters - Environmental water Waters - Industrial Waters - Potable water Waters -Swimming pools and spas Waters - Trade waste Waters - Waste water treatment plant effluent (WWTP effluent)	N/A	SP084 based on ISO 16266:2006	

Detection of Clostridium Perfringens	Culture of bacteria	Dairy products	N/A	SP223 based on Practical Food Microbiology (Roberts and Greenwood) 3rd Edition & ISO 7937: 2004	
Detection of Coagulase Positive Staphylococci		Dairy products Product contact surfaces Surfaces	N/A	SP233 based on ISO 6888-3:2003	
Detection of Cronobacter species		Dairy products Foodstuffs intended for special nutritional uses Surfaces	N/A	SP096 based on BAM Chapter 29 2012 and EN ISO 22964:2017	
Detection of E.coli O157 using the immunomagnetic separation technique	Culture of bacteria and immunomagnetic separation technique	Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and poultry	N/A	SP041 based on ISO 16654:2001 Amendment A1:2017	

		Non-alcoholic beverages Nuts and nut products, snacks Pet foods Prepared dishes Product contact surfaces Production animals Soups, broths and sauces Surfaces			
Detection of E.coli O157:H7 by Neogen Reveal	Reveal® test system	Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses Herbs and spices Meat and meat products, game and poultry product contact surfaces Production animals Surfaces	N/A	SP052 based on Neogen 8 hour Reveal	
Detection of Listeria Species	Culture of bacteria	Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Compost and related materials Confectionery Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods	N/A	SP039/SP181 based on EN ISO 11290-1:2017	

		and their additives Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and poultry Non-alcoholic beverages Nuts and nut products, snacks Pet foods Prepared dishes Product contact surfaces Production animals Soups, broths and sauces Surfaces			
	Detection of Listeria Species using the ALOA One Day Method	Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Compost and related materials Confectionery Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods and their additives Foodstuffs intended for special	N/A	SP142/SP181 based on AES ALOA One Day Method for Listeria and EN ISO11290-1:2017 (AFNOR Approved)	

		nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and poultry Non-alcoholic beverages Nuts and nut products, snacks Pet foods Prepared dishes Product contact surfaces Production animals Soups, broths and sauces Surfaces		
	Detection of Listeria Spp by Solus Listeria ELISA	Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat	DSX™ and DS2™ Automated ELISA Systems	SP154/SP181 based on Solus Listeria ELISA Kit instructions (AFNOR approved) and EN ISO 11290-1:2017



		products, game and poultry Non-alcoholic beverages Nuts and nut products, snacks Pet foods Prepared dishes Product contact surfaces Production animals Soups, broths and sauces Surfaces			
	Detection of presence or absence of Coliforms in food and animal feedingstuffs	Fish, shellfish and molluscs Meat and meat products, game and poultry	N/A	SP180 based on ISO 4831:2006	
	Detection of presumptive E.coli	Dairy products Product contact surfaces Surfaces	N/A	SP225 based on ISO 7251:2005	
	Detection of presumptive Enterobacteriaceae (Presumptive & Confirmed)	Dairy products Product contact surfaces Surfaces	N/A	SP224 based on EN ISO 21528-1:2017	
	Detection of Salmonella spp	Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Compost and related materials Dairy products Egg and egg products	N/A	SP038/SP178 based on ISO 6579-1:2017	

		<p>Fats and Oils  Fish, shellfish and molluscs  Foods/stockfoods and their additives  Foodstuffs intended for special nutritional uses  Fruit and vegetables  Herbs and spices  Ices and desserts  Meat and meat products, game and poultry  Non-alcoholic beverages  Nuts and nut products, snacks  Pet foods  Prepared dishes  Product contact surfaces  Production animals  Soups, broths and sauces  Surfaces</p>			
	<p>Detection of Salmonella spp by Solus Salmonella ELISA</p>	<p>Alcoholic beverages (other than wine)  Animal feeds  Cereals and bakery products  Cocoa and cocoa preparations, coffee and tea  Compost and related materials  Confectionery  Dairy products  Egg and egg products  Fats and Oils  Fish, shellfish and molluscs</p>	<p>DSX™ and DS2™ Automated ELISA Systems</p>	<p>SP102/SP078 based on Solus Salmonella ELISA kit instructions (AFNOR approved) and ISO6579-1:2017</p>	

		<p>Foods/stockfoods and their additives  Foodstuffs intended for special nutritional uses  Fruit and vegetables  Herbs and spices  Ices and desserts  Meat and meat products, game and poultry  Non-alcoholic beverages  Nuts and nut products, snacks  Pet foods  Prepared dishes  Product contact surfaces  Production animals  Soups, broths and sauces  Surfaces</p>			
Detection, Enumeration and Identification of Legionella sp. (presumptive) by Latex agglutination (Legionella pneumophila serogroup 1, Legionella pneumophilla serogroup 2-14, Legionella Sp.)	Membrane Filtration & Latex Agglutination	<p>Waters - Industrial  Waters - Potable water  Waters -Swimming pools and spas  Waters - Trade waste</p>	N/A	SP182 based on EN ISO 11731:2017 Procedures 8, 9 and 10	
Enumeration and confirmation of coagulase-positive staphylococci	Culture of bacteria	<p>Alcoholic beverages (other than wine)  Animal feeds  Cereals and bakery products  Cocoa and cocoa</p>	N/A	SP036 based on EN ISO 6888-1-1999 A2:2018	

		preparations, coffee and tea Confectionery Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and poultry Non-alcoholic beverages Nuts and nut products, snacks Pet foods Prepared dishes Product contact surfaces Production animals Soups, broths and sauces Surfaces			
Enumeration of a heterotrophic plate count		Waters - Industrial Waters - Potable water	N/A	SP089 based on APHA 9215:2017	
Enumeration of a heterotrophic plate count by membrane filtration	Membrane Filtration	Waters - Industrial Waters - potable water	N/A	SP090 based on APHA 9215:2017	
Enumeration of a heterotrophic plate count in		Waters - Industrial Water - Potable water	N/A	SP191 based on EN ISO 15883-1:2009	

				A1:2014 and APHA 9215:2017	
	potable and industrial waters by the membrane filtration method at 30°C for 5 days				
	Enumeration of aerobic and anaerobic mesophilic spore forming bacteria	Culture of bacteria	Dairy products	N/A	SP113 based on ISO 4833-1: 2013
	Enumeration of aerobic and anaerobic thermophilic spore forming bacteria		Dairy products	N/A	SP220 based on ISO/TS 27265:2009
	Enumeration of Anaerobic Microorganisms by colony count technique (Anaerobic Total Viable Count)		Alcoholic beverages (other than wine) Cereals and bakery products Dairy products Egg and Egg products Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses Fruit and vegetables Meat and Meat products, game and poultry Non-alcoholic beverages Nuts and nut products, snacks Pet foods Prepared dishes Soups, broths and sauces	N/A	SP129 based on EN ISO 4833- 1:2013
	Enumeration of Campylobacter		Meat and meat products, game and poultry	N/A	SP213 based on EN ISO 10272-2:2017

Enumeration of Clostridium perfringens in water	Membrane Filtration	Waters - Environmental water Waters - Industrial Waters - Potable water Waters -Swimming pools and spas Waters - Trade waste Waters - Waste water treatment plant effluent (WWTP effluent)	N/A	SP207 based on Microbiology of Drinking Water 2015, Part 6B and ISO 14189:2013	
Enumeration of Clostridium perfringens	Culture of bacteria	Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and poultry Non-alcoholic beverages Nuts and nut products, snacks Others- Mixed foods Pet foods Prepared dishes	N/A	SP042 based on EN ISO 7937 (2004)	

		Product contact surfaces Production animals Soups, broths and sauces Surfaces			
Enumeration of Coagulase Positive Staphylococci by RPF		Dairy products Product contact surfaces Surfaces	N/A	SP234 based on EN ISO 6888-2:1999+A1:2003	
Enumeration of culturable micro-organisms (22oC for 72hrs, 37oC for 24/48hrs)		Waters - Environmental water Waters - Industrial Waters - Potable water Waters -Swimming pools and spas Waters - Trade wastes Waters - Waste water treatment plant effluent (WWTP effluent)	N/A	SP031 based on ISO 6222- (1999) and on The Microbiology of Drinking Water (2012) - Part 7	
Enumeration of E. coli in shellfish- Most Probable Number Method	Most Probable Number method	Fish, shellfish and molluscs	N/A	SP153 based on EN ISO 16649-3 (2015)	
Enumeration of E.coli and Coliforms in Water	Membrane Filtration	Waters - Environmental water Waters - Industrial Waters - Potable water Waters -Swimming pools and spas Waters - Trade wastes Waters - Waste water treatment plant effluent (WWTP effluent)	N/A	SP140 based on Microbiology of Drinking Water Part 4, B 2016	

<p>Enumeration of Enterobacteriaceae (Presumptive &amp; Confirmed)</p>	<p>Culture of bacteria</p>	<p>Alcoholic beverages (other than wine)  Animal feeds  Cereals and bakery products  Cocoa and cocoa preparations, coffee and tea  Confectionery  Dairy products  Egg and egg products  Fats and Oils  Fish, shellfish and molluscs  Foods/stockfoods and their additives  Foodstuffs intended for special nutritional uses  Fruit and vegetables  Herbs and spices  Ices and desserts  Meat and meat products, game and poultry  Non-alcoholic beverages  Nuts and nut products, snacks  Pet foods  Prepared dishes  Product contact surfaces  Production animals  Soups, broths and sauces  Surfaces</p>	<p>N/A</p>	<p>SP033 based on EN ISO 21528-2:2017</p>	
<p>Enumeration of Enterococci</p>		<p>Dairy products  Meat and meat products, game and poultry  Product contact</p>	<p>N/A</p>	<p>SP058 based on BS 4285 Section 3.11 1985</p>	



		surfaces Production animals Surfaces			
		Waters - Environmental water Waters - Industrial Waters - Potable water Waters -Swimming pools and spas Waters - Trade wastes Waters - Waste water treatment plant effluent (WWTP effluent)	N/A	SP071 based on ISO 7899-2 (2000)	
	Enumeration of Escherichia coli and Coliform bacteria - Most Probable Number method (Colilert)	Most Probable Number method	Waters - Environmental water Waters - Industrial Waters - Potable water Waters -Swimming pools and spas Waters - Trade wastes Waters - Waste water treatment plant effluent (WWTP effluent)	N/A	SP196 based on ISO 9308-2:2012 and the IDEXX Colilert 18 test kit
	Enumeration of Listeria monocytogenes and Listeria Species	Culture of bacteria	Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Compost and related materials Dairy products Egg and egg products	N/A	SP040/SP181 based on EN ISO 11290- 2:2017

		<p>Fats and Oils  Fish, shellfish and molluscs  Foods/stockfoods and their additives  Foodstuffs intended for special nutritional uses  Fruit and vegetables  Herbs and spices  Ices and desserts  Meat and meat products, game and poultry  Non-alcoholic beverages  Nuts and nut products, snacks  Pet foods  Prepared dishes  Product contact surfaces  Production animals  Soups, broths and sauces  Surfaces</p>			
	Enumeration of mesophilic Lactic acid bacteria	<p>Alcoholic beverages (other than wine)  Animal feeds  Cereals and bakery products  Cocoa and cocoa preparations, coffee and tea  Confectionery  Dairy products  Egg and egg products  Fats and Oils  Fish, shellfish and molluscs  Foods/stockfoods and their additives</p>	N/A	SP068 based on ISO 15214:1998	

		<p>Foodstuffs intended for special nutritional uses  Fruit and vegetables  Herbs and spices  Ices and desserts  Meat and meat products, game and poultry  Non-alcoholic beverages  Nuts and nut products, snacks  Pet foods  Prepared dishes  Product contact surfaces  Production animals  Soups, broths and sauces  Surfaces</p>			
	<p>Enumeration of presumptive <i>Bacillus cereus</i></p>	<p>Alcoholic beverages (other than wine)  Animal feeds  Cocoa and cocoa preparations, coffee and tea  Confectionery  Egg and egg products  Fats and Oils  Fish, shellfish and molluscs  Foods/stockfoods and their additives  Foodstuffs intended for special nutritional uses  Fruit and vegetables  Herbs and spices  Ices and desserts  Meat and meat products, game and</p>	<p>N/A</p>	<p>SP045 based on EN ISO 7932:2004</p>	

		poultry Non-alcoholic beverages Nuts and nut products, snacks Pet foods Prepared dishes Product contact surfaces Production animals Soups, broths and sauces Surfaces			
	Enumeration of presumptive <i>Bacillus cereus</i> and presumptive <i>Bacillus</i> species	Cereals and bakery products Dairy products	N/A	SP045 based on EN ISO 7932:2004	
	Enumeration of presumptive <i>Pseudomonas</i> spp	Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and	N/A	SP046 based on EN ISO 13720: 2010	

		poultry Non-alcoholic beverages Nuts and nut products, snacks Pet foods Prepared dishes Product contact surfaces Production animals Soups, broths and sauces Surfaces			
	Enumeration of presumptive $\beta$ -glucuronidase positive E. coli	Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Compost and related materials Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and poultry Non-alcoholic beverages	N/A	SP049 based on ISO 16649-2:2001	

		Nuts and nut products, snacks Pet foods Prepared dishes Product contact surfaces Production animals Soups, broths and sauces Surfaces		
	Enumeration of presumptive $\beta$ -glucuronidase positive E. coli - with resuscitation using membranes. Enumeration of presumptive $\beta$ -glucuronidase positive E. coli	Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Compost and related materials Confectionery Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and poultry Non-alcoholic beverages Nuts and nut products, snacks Pet foods	N/A	SP049 based on ISO 16649-1:2018

		Prepared dishes Product contact surfaces Production animals Soups, broths and sauces Surfaces			
	Enumeration of Sulphite Reducing Clostridia	Dairy products Meat and meat products, game and poultry Product contact surfaces Production animals Surfaces	N/A	SP110 based on BS ISO 15213: 2003	
	Enumeration of Thermotolerant bacteria	Dairy products Product contact surfaces Surfaces	N/A	SP057 based on BS4285-3.2: 1991	
	Enumeration of thermophilic bacteria	Dairy products Product contact surfaces Surfaces	N/A	SP222 based on ISO/TS 27265:2009	
	Enumeration of Total Coliforms	Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods and their additives Foodstuffs intended for special	N/A	SP035 based on ISO 4832:2006	

		nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and poultry Non-alcoholic beverages Nuts and nut products, snacks Pet foods Prepared dishes Product contact surfaces Production animals Soups, broths and sauces Surfaces			
	Enumeration of Yeasts & Moulds in Milk and Milk products	Dairy products	N/A	SP216 based on ISO 6611:2004	
	Enumeration of Yeasts and Moulds - products with water activity greater than 0.95	Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses	N/A	SP133 based on ISO 21527-1:2008	



		<ul style="list-style-type: none"> <li>Fruit and vegetables</li> <li>Herbs and spices</li> <li>Ices and desserts</li> <li>Meat and meat products, game and poultry</li> <li>Non-alcoholic beverages</li> <li>Nuts and nut products, snacks</li> <li>Pet foods</li> <li>Prepared dishes</li> <li>Product contact surfaces</li> <li>Production animals</li> <li>Soups, broths and sauces</li> <li>Surfaces</li> </ul>			
	Enumeration of Yeasts and Moulds - products with water activity less than 0.95	<ul style="list-style-type: none"> <li>Animal feeds</li> <li>Cereals and bakery products</li> <li>Cocoa and cocoa preparations, coffee and tea</li> <li>Confectionery</li> <li>Dairy products</li> <li>Egg and egg products</li> <li>Fats and Oils</li> <li>Fish, shellfish and molluscs</li> <li>Foods/stockfoods and their additives</li> <li>Foodstuffs intended for special nutritional uses</li> <li>Fruit and vegetables</li> <li>Herbs and spices</li> <li>Ices and desserts</li> <li>Meat and meat products, game and poultry</li> <li>Non-alcoholic</li> </ul>	N/A	SP136 based on ISO 21527-2:2008	

		beverages Nuts and nut products, snacks Pet foods Prepared dishes Soups, broths and sauces			
Faecal Coliforms MPN Colilert	Most Probable Number method	Waters - Environmental water Waters - Industrial Waters - Potable water Waters -Swimming pools and spas Waters - Trade waste Waters - Waste water treatment plant effluent (WWTP effluent)	N/A	SP200 based on the IDEXX Colilert 18 test kit	
Lactobacillus enumeration	Culture of bacteria	Animal feeds Cocoa and cocoa preparations, coffee and tea Confectionery Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses Herbs and spices Ices and desserts Meat and meat products, game and poultry Non-alcoholic beverages Nuts and nut products, snacks Others - Raw Pastry Pet foods	N/A	SP177 based on Oxoid Manual	

	Method for the Detection of Thermotolerant Campylobacter		Alcoholic beverages (other than wine) Animal feeds Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Dairy products Egg and egg products Fats and Oils Fish, shellfish and molluscs Foods/stockfoods and their additives Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and poultry Non-alcoholic beverages Nuts and nut products, snacks Pet foods Prepared dishes Product contact surfaces Production animals Soups, broths and sauces Surfaces	N/A	SP043 based on EN ISO 10272-1:2017, procedures A and B	
805 Detection and/or identification of bacterial, parasite, fungal and viral nucleic acids using	Method for the isolation and confirmation of Shiga Toxin Producing E. coli (STEC)	Gene amplification and detection by real-time PCR	Meat and meat products, game and poultry Product contact surfaces	Bio-Rad CFX96™ real-time PCR detection system	SP210 based on MLG 5C.00	

appropriate techniques - .01 Nucleic acid probe hybridization, CE marked commercial systems	Serogroups (O157, O111, O26, O103, O145, O45 and O121) following PCR detection of virulence genes		Production animals Surfaces			
	Method for the real- time PCR detection of virulence genes in Shiga Toxin Producing E. coli (STEC) and of 7 major serogroups (O157, O111, O26, O103, O145, O45 and O121)		Meat and meat products, game and poultry Product contact surfaces Production animals Surfaces	Bio-Rad CFX96™ real-time PCR detection system	SP209 based on MLG 5C.00	

Chemical Testing

Category: A

Chemistry Field - Tests	Test name	Analyte	Range of measurement	Matrix	Equipment/technique	Standard reference/SOP
751 Food testing - .02 Nutritional analysis	Ash	Ash	0.1 to 15g/100g	Cereals and bakery products Cocoa and cocoa preparation, coffee and tea Confectionery Dairy products Fish, shellfish and molluscs Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and poultry Nuts and nut products, snacks Pet foods Prepared dishes Soups, broths and sauces	By Furnace	SP149 based on BS4401 Part 1 1998, ISO 936: 1998 and AOAC 21st Edition, 2019 - Method 923.03 (32.1.05)
	Determination of Nitrates & Nitrites by IC	Nitrate	5-200 mg/kg NO <sub>3</sub> , equivalent to 7-275 mg/kg NaNO <sub>3</sub>	Meat and meat products, game and poultry	Anion Exchange Chromatography	SP118 based on Dionex Application Note 112, 1998, ISO 2918 (1975) and ISO 3091 (1975)
		Nitrite	5 to 200 mg/kg NO <sub>2</sub> , equivalent to	Meat and meat products, game and poultry	Anion Exchange Chromatography	SP118 based on Dionex Application Note 112, 1998, ISO

		7.5-300 mg/kg as NaNO <sub>2</sub>			2918 (1975) and ISO 3091 (1975)
Determination of Salt by IC	Chloride	0.5-7.5% NaCl	Meat and meat products, game and poultry	Anion Exchange Chromatography	SP117 based on ISO 1841 (1996) and Dionex Application Note 112, 1998
Determination of Salt by Titration		1 to 10% NaCl	Dairy products - Cheese Fish, shellfish and molluscs Meat and meat products, game and poultry	Titration	SP091 based on ISO 1841-1 (1996)
Fat	Fat	0.3 to 100% Fat 0.3 to 100% Fat 0.3 to 100% Fat 0.3 to 100% Fat 0.3 to 100% Fat 0.3 to 100% Fat	Fats and oils Fish, shellfish and molluscs Meat and meat products, game and poultry Pet foods Prepared dishes Soups, broths and sauces	Nuclear Magnetic Resonance	SP192 (NMR) Analyser Based on CEM Smart Trac Operation Manual, Rev. 2, 2001. Keeton Et AL.: "Rapid Determination of Fat in Meats by Microwave and Nuclear Magnetic Resonance Analysis", Journal of AOAC International, Vol. 86, No.6, 2003
Meat Content and Added water	Added water	N/A	Meat and Meat Products, game and Poultry	Calculation	SP232 based on Stubbs and More 1919 and Pearson's Composition and Analysis of Foods
	Meat Content	N/A	Meat and Meat Products, game and Poultry	Calculation	SP232 based on Stubbs and More 1919 and Pearson's Composition and Analysis of Foods
Moisture and Total Solids	Moisture	3.0 to 99.0g/100g	Cereals and bakery products Cocoa and cocoa	Oven Drying	SP148 based on BS 4401-3 1997, ISO1442:1997

			preparation, coffee and tea Confectionery Dairy products Fish, shellfish and molluscs Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and desserts Meat and meat products, game and poultry Nuts and nut products, snacks Pet foods Prepared dishes Soups, broths and sauces		Pearsons, Composition and Analysis of Foods 9th Edition 1991, pages 383, 566 & 600. AOAC 21st Edition, 2019 - Official Method 950.46 (39.1.02-B).
pH	pH	2 to 10 pH units	Cereals and bakery products Dairy products Egg and egg products Foodstuffs intended for special nutritional uses Fruits and vegetables Meat and meat products, game and poultry Nuts and nut products, snacks Pet foods Prepared dishes Soups, broths and sauces	pH Meter	SP125 based on AOAC Official Methods 981.12 and 943.02, ISO 2917-19 and BS 770-5:1996

	Protein	Nitrogen	0.01% to 18% Nitrogen	Cereals and bakery products Confectionery Dairy products Fish, shellfish and molluscs Foodstuffs intended for special nutritional uses Meat and meat products, game and poultry Nuts and nut products, snacks Pet foods Prepared dishes Soups, broths and sauces	LECO analyser	SP226 based on LECO TruMac N analyser instructions and AOAC 21st Edition, 2019 - Method 992.15 (39.1.16)
		Protein	0.1% to 100% Protein	Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Dairy products Fish, shellfish and molluscs Foodstuffs intended for special nutritional uses Fruit and vegetables Herbs and spices Ices and deserts Meat and meat products, game and poultry Nuts and nut products, snacks Pet foods Prepared dishes	LECO analyser	SP226 based on LECO TruMac N analyser instructions and AOAC 21st Edition, 2019 - Method 992.15 (39.1.16)



				Soups, broths and sauces		
	Salt	Na	0.01 to 10.0% Salt	Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Dairy products - cheese Fish, shellfish and molluscs Foodstuffs intended for special nutritional uses Fruit and Vegetables Herbs and spices Ices and deserts Meat and meat products, game and poultry Nuts and nut products, snacks Pet Foods Prepared dishes Soups, broths and sauces	By Calculation From Sodium	SP198 By Calculation from Sodium
	Sodium		0.004 to 4.0% Na	Cereals and bakery products Cocoa and cocoa preparations, coffee and tea Confectionery Dairy products - cheese Fish, shellfish and molluscs Foodstuffs intended for special nutritional uses Fruit and	Flame Photometry	SP198 - Model 410 Classic Flame Photometer Operator Manual, Issue 1, October 2006.

				vegetables Herbs and spices Ices and deserts Meat and meat products, game and poultry Nuts and nut products, snacks Pet Foods Prepared dishes Soups, broths and sauces		
	Total Carbohydrate and energy	Total Carbohydrate and Energy	N/A	Meat and Meat Products, game and Poultry Pet foods Prepared dishes Soups, broths and sauces	Calculation	SP231 based on EU1169 2011 and Pearson's Composition and Analysis of Foods
	Water Activity	Water Activity	0.04 Aw to 1.00 Aw	Cereals and bakery products Dairy products Egg and egg products Foodstuffs intended for special nutritional uses Fruits and vegetables Meat and meat products, game and poultry Nuts and nut products, snacks Pet foods Prepared dishes Soups, broths and sauces	Water Activity Meter	SP228 based on BS ISO 18787:2017 and Novasina LabMaster-Aw Meter
766 Environmental testing (inc waters) -	BOD and CBOD (Nitrification suppressed BOD)	BOD and cBOD	1.0 to 10,000 mg/l O2	Bore waters Ground waters Surface waters	Dissolved Oxygen Meter	P280 (DO Meter) based on "Methods for the Examination of

.02 Biochemical oxygen demand				Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes		Waters and Associated Materials", HMSO 1988 5 Day BOD 11 7522120, "APHA 23rd edition 2017, Standard Methods for the Analysis of Water and Wastewater 5210 and 4500-C" and HACH HQ Series Portable meters user manual.
766 Environmental testing (inc waters) - .03 Chemical oxygen demand	Chemical Oxygen Demand	COD	5 - 15,000 mg/l O2	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes	Spectrophotometer	P210 Spectrophotometer method based on APHA 23rd edition 2017 5220-D
766 Environmental testing (inc waters) - .05 Inorganic	Alkalinity	CaCO3	10.0 - 500.0 mg/l CaCO3	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes	Titration	P214 Titrimetric Method based on APHA 23rd edition 2017 2320-B
	Ammonia	NH3N	0.02 - 80.0 mg/l NH3N	Bore waters Ground waters Surface waters Sewage	Gallery Autoanalyser	P281 based on APHA 23rd edition 2017 and automated colorimetry In-house

			Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes		Method using Gallery Analyser following manufacturer's instructions
Chloride	Cl	4 - 20000 mg/l Cl	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes	Gallery Autoanalyser	P281 based on APHA 23rd edition 2017 and automated colorimetry In-house Method using Gallery Analyser following manufacturer's instructions
Colour	Colour	2 to 500 Hazen	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes	Gallery Autoanalyser	P237 based on APHA 23rd edition 2017 Method 2120B + C
Fluoride	F	0.08 to 2.0 mg/l F	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP	Spectrophotometer	P228 SPADNS method based on APHA 23rd edition 2017 4500-F-D

			effluent) Waters for potable and domestic purposes		
Nitrate calculated from T.O.N and Nitrite	NO3N	1.0 - 100 mg/l NO3N	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes	Gallery Autoanalyser	P281 based on APHA 23rd edition 2017 and automated colorimetry In-house Method using Gallery Analyser following manufacturer's instructions
Nitrite	NO2N	0.01 - 7.5 mg/l NO2N	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes	Gallery Autoanalyser	P281 based on APHA 23rd edition 2017 and automated colorimetry In-house Method using Gallery Analyser following manufacturer's instructions
Orthophosphate	P	0.02 - 40 mg/l	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and	Gallery Autoanalyser	P281 based on APHA 23rd edition 2017 and automated colorimetry In-house Method using Gallery Analyser following manufacturer's instructions

			domestic purposes		
Sulphate	SO4	5.0 - 500 mg/l SO4	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes	Turbidity Meter	P243 Turbidimetric Method based on APHA 23rd edition 2017 4500 - SO42-E
Total Hardness	CaCO3	5.0 - 1000 mg/l CaCO3	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes	Titration	P213 Titrimetric Method based on APHA 23rd edition 2017 2340-C
Total Kjeldahl Nitrogen (By Calculation)	Kjeldahl Nitrogen	1.0 - 75 mg/l N	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes	Calculation	P285 based on Hach Company Standard Method 10071 10th edition 2014
Total Nitrogen (Hach)	N	1.0 - 150 mg/l N	Bore waters Ground waters	Spectrophotometer	P285 based on Hach Company Standard

			Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes		Method 10071 10th edition 2014
Total Oxidised Nitrogen	TON	0.25 - 100 mg/l	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes	Gallery Autoanalyser	P281 based on APHA 23rd edition 2017 and automated colorimetry In-house Method using Gallery Analyser following manufacturer's instructions
Total Phosphorus	P	0.1 - 50 mg/l P	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes	Spectrophotometer	P207 Ascorbic Acid Method based on APHA 23rd edition 2017 4500 - P - E
Turbidity	Turbidity	0.1 to 1000	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water	Turbidity Meter	P239 based on APHA 23rd edition 2017 Method 2130B

				treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes		
767 Physical test/measurement - .01 pH	pH	pH	4.0 - 10.0	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes	pH Meter	P233 Electrometric Method based on APHA 23rd edition 2017 4500-H+ - B
767 Physical test/measurement - .02 Conductivity	Conductivity	Conductivity	2 - 6000 $\mu$ S/cm	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for potable and domestic purposes	Conductivity Meter	P284 Based on APHA 23rd edition 2017 Method 2510
767 Physical test/measurement - .03 Suspended Solids	Total Suspended Solids	Total Suspended Solids	5 - 15,000 mg/l	Bore waters Ground waters Surface waters Sewage Trade wastes Waste water treatment plant effluent (WWTP effluent) Waters for	Gravimetry	P202 Gravimetric Method based on APHA 23rd edition 2017 2540-D



				potable and domestic purposes		
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