

BOTTLE GUIDE

MARKET LEADING PROVIDER
OF LABORATORY AND
CONSULTANCY SERVICES

Latis Scientific
Unit C1
Acorn Industrial Estate
Crayford Road
Crayford, Kent
DA1 4AL

Tel: 0044 (0)20 8853 3900
info@latisscientific.co.uk

Version update : January 2020

Microbiology Suites

All samples for microbiological analysis except **legionella**, should be stored and transported at a temperature between 2-8°C and tested within 24hrs. Samples for legionella analysis should be stored at room temperature and tested within 48hrs.

Any sample water not containing oxidising biocides such as chlorine and bromine, can also be taken in our blue cap bottles.

Suite Code	Suite Name	Sample Volume
BG29B	BSRIA BG29:2012 Microbiology - 7 Days after Completion of Pre-comm Clean	250ml red cap bottle
BG29B2	BSRIA BG29:2012 Microbiology - Between Pre-comm Clean and Completion	250ml red cap bottle
BG29B3	BSRIA BG29:2012 Microbiology - Fill Water Quality	250ml red cap bottle
BSBM	BSRIA AG1.2001.1 Microbiology - 5 Day SRB	250ml red cap bottle
BSBM-21DAY	BSRIA AG1.2001.1 Microbiology - 21 Day SRB	250ml red cap bottle
CT	Cooling Tower - TVC@22 & 37 °C + <i>Pseudomonas</i> spp.	250ml red cap bottle
CTG	Cooling Tower - TVC@30 °C + <i>Pseudomonas</i> spp.	250ml red cap bottle
DWB	Drinking Water - With Assessment	250ml red cap bottle
DWM	Drinking Water + Fungi - With Assessment	250ml red cap bottle
DVM	<i>Drinking Water + Pseudomonas</i> spp. + <i>Pseudomonas aeruginosa</i>	500ml red cap bottle
DWP	Drinking Water + <i>Pseudomonas</i> spp.	250ml red cap bottle
ECC	<i>Coliforms & E.coli</i>	250ml red cap bottle
FD	Full Differential - 5 Day SRB	500ml red cap bottle
FD-21DAY	Full Differential - 21 Day SRB	500ml red cap bottle
HTM2030B	HTM2030 - Microbiology	500ml red cap bottle + 15ml glass Endotoxin vial
HTM2031B	HTM2031 - Microbiology	15ml glass Endotoxin vial
IWB	Ingress Water - Microbiology	250ml red cap bottle
LEGP	Legionella	1L red cap bottle
LWB	Lake Water - Microbiology	1L + 500ml red cap bottle

Microbiology Suites (2)

Suite Code	Suite Name	Sample Volume
LWB2	Lake Water - No <i>Salmonella</i>	500ml red cap bottle
POT	Drinking Water - No Assessment	250ml red cap bottle
PSEUDS	<i>Pseudomonas Species</i> + <i>Pseudomonas aeruginosa</i>	250ml red cap bottle
PWSMIC1	Private Water Supply Microbiology Audit Monitoring - Non-Regulatory	500ml red cap bottle
PWSMIC2	Private Water Supply Microbiology Check Monitoring - Non-Regulatory	250ml red cap bottle
PWSMICREG1	Private Water Supply Microbiology Audit Monitoring - Regulatory	A sampling kit containing the appropriate bottles will be provided to you on request
PWSMICREG2	Private Water Supply Microbiology Check Monitoring - Regulatory	
RATM	Renal Association Table - Microbiology	250ml red cap bottle + 15ml glass Endotoxin vial
RDF-21DAY	Reduced Differential - SRB 21 Day	250ml red cap bottle
SPB	Swimming Pool + <i>Pseudomonas</i> spp. - Microbiology	500ml red cap bottle
SPB1	Swimming Pool - Microbiology	250ml red cap bottle
TP	TVC @ 22 & 37 °C + <i>Pseudomonas</i> spp.	250ml red cap bottle
TPN	TVC @ 22 & 37 °C + <i>Pseudomonas</i> spp. + NRB	250ml red cap bottle
TPSN	BSRIA + NRB - 5 Day SRB	250ml red cap bottle
TPSN-21DAY	BSRIA + NRB - 21 Day SRB	250ml red cap bottle
TVC	TVC @ 22 & 37 °C	250ml red cap bottle
TWB	Thames Drinking Water - Microbiology	250ml red cap bottle
WFB	Water Feature or Vending Machine Analysis	500ml red cap bottle

For any analysis outside this bottle guide, please contact us on bottlerequests@latisscientific.co.uk or +44 (0)208 853 3900 (select Option 4).

For accreditation status of any analysis, please check our website or the following link

<http://www.ukas.com/services/accreditation-services/laboratory-accreditation-isoiec-17025>

Individual Microbiology Tests

All samples for microbiological analysis except legionella should be stored and transported at a temperature between 2-8°C and tested within 24hrs. Samples for legionella analysis should be stored at room temperature and tested within 48hrs.

Any sample water not containing oxidising biocides such as chlorine and bromine, can also be taken in our blue cap bottles.

Test Name	Minimum Sample Volume
Algae	30ml red cap bottle
<i>Bacillus</i> (per ml)	5ml red cap bottle
<i>Clostridium perfringens</i> per 100ml	100ml red cap bottle
Coliforms per 100ml Idexx	100ml red cap bottle (both analyses can be tested from the same volume)
<i>Escherichia coli</i> per 100ml Idexx	
Cyanobacteria	30ml red cap bottle
Endotoxin	15ml glass endotoxin vial
Environmental Mycobacteria	200ml red cap bottle
<i>Flavobacterium</i> (per ml)	5ml red cap bottle
<i>Enterococci</i> per 100ml	100ml red cap bottle
<i>Enterococci</i> per 100ml - Idexx	100ml red cap bottle
Faecal Coliforms	100ml red cap bottle
Intestinal enterocci	115ml red cap bottle
<i>Listeria</i>	100ml red cap bottle
<i>Legionella pneumophila</i> PCR	1000ml red cap bottle (both analyses can be tested from the same volume)
<i>Legionella</i> species PCR	
<i>Mycobacterium</i> PCR	1000ml red cap bottle
Mould (per ml)	5ml red cap bottle
Mould (per 100ml)	100ml red cap bottle
Microfungi	100ml red cap bottle
Nitrite Oxidising Bacteria	5ml red cap bottle
Nitrate / Nitrite Reducing Bacteria	5ml red cap bottle

Individual Microbiology Tests (2)

Test Name	Minimum Sample Volume
<i>Pseudomonas aeruginosa</i>	100ml red cap bottle
<i>Pseudomonas aeruginosa</i> per 100ml Idexx	100ml red cap bottle
<i>Pseudomonas</i> species (100ml) - Clean waters	100ml red cap bottle
Pseudomonads - Process Waters	5ml red cap bottle
<i>Salmonella</i> spp.	1000ml red cap bottle
Sulphate reducing bacteria - 5 day	5ml red cap bottle
Suphate reducing bacteria - 21 day	5ml red cap bottle
<i>Staphylococcus aureus</i>	100ml red cap bottle
<i>Staphylococcus</i> species	100ml red cap bottle
<i>Streptococcus</i> species	100ml red cap bottle
TVC @ 22°C (Potable)	5ml red cap bottle
TVC @ 37°C (Potable)	5ml red cap bottle
TVC @ 30°C (cooling Towers)	5ml red cap bottle
TVC @ 37°C (pool waters)	5ml red cap bottle
TVC @ 22°C (Dialysis 100ml)	105ml red cap bottle
TVC @ 22°C (Dialysis 1000ml)	1010ml red cap bottle
TVC @ 35°C (Washers CFPP01-01 Part D/HTM2030)	200ml red cap bottle
TVC @ 30°C (Washers CFPP 01-06))	200ml red cap bottle
Yeasts (per ml)	5ml red cap bottle
Yeasts (per 100ml)	100ml red cap bottle

For any analysis outside this bottle guide, please contact us on bottlerequests@latisscientific.co.uk or +44 (0)208 853 3900 (select Option 4).

For accreditation status of any analysis, please check our website or the following link

<http://www.ukas.com/services/accreditation-services/laboratory-accreditation-isoiec-17025>

Chemistry Suites

All samples for chemical analysis should be stored and transported at a temperature between 2-8°C
Please note that DWC, IWCH and LWCH suites include analyses with holding times of 24hrs.

Suite Code	Suite Name	Recommended Sample Volumes
BG29C	BSRIA BG29:2012 Chemistry - 7 Days after Completion of Pre-comm Clean	1000ml blue cap bottle
BG29C2	BSRIA BG29:2012 Chemistry - Between Pre-comm Clean & Completion	1000ml blue cap bottle
BG29C3	BSRIA BG29:2012 Chemistry - Between Pre-comm Clean & Completion + Glycol	1000ml blue cap bottle
BG29C4	BSRIA BG29:2012 Chemistry - Fill Water Quality	500ml blue cap bottle
BSCH	BSRIA AG1.2001.1 - Chemistry	1000ml blue cap bottle
CTCH/CTEXTERNAL	Cooling Tower - Chemistry	1000ml blue cap bottle
DWC *1	Drinking Water - Chemistry	1000ml blue cap bottle
HCFC/PH	Closed System - Full Chemistry	1000ml blue cap bottle + 500ml blue cap bottle
HCG	Closed System - Partial Chemistry with Glycol	500ml blue cap bottle
HCM	Closed System - Partial Chemistry with Molybdate	500ml blue cap bottle
HCMN	Closed System - Partial Chemistry with Nitrite & Molybdate	500ml blue cap bottle
HCN	Closed System - Partial Chemistry with Nitrite	500ml blue cap bottle
HTM2030/CFPP0101D	Washer Chemical Purity	1000ml blue cap bottle
CFPP0106	CFPP 01-06 Washer Chemical Purity	500ml blue cap bottle + TOC vial
HTM2031/CFPPST	Steriliser Chemical Purity	2 x 1000ml blue cap bottle
IWCH	Ingress Water - Chemistry	1000ml blue cap bottle for Mains Water, 1000ml blue cap for Ingress Water
LWCH	Lake Water - Chemistry	2 x 1000ml blue cap bottle + 500ml blue cap bottle + Dissolved Oxygen Bottle
PWSCHEM1 *2	Private Water Supply Chemistry Audit Monitoring - non-regulatory	5 x 1litre Amber Glass bottles, 3 x 1000ml blue cap bottle, 1 x TOC bottle, 1 x VOC vial, 1 x THM Bottle
PWSCHEM2	Private Water Supply Chemistry Check Monitoring - non-regulatory	2 x 1litre blue cap bottle

*1: DWC suites includes taste test - 'Sample Submission for Taste' on page 9

*2: LWCH suite includes oxygen saturation - please provide a on-site temperature reading on the sample submission form

Chemistry Suites (2)

Suite Code	Suite Name	Recommended Sample Volumes
PWSCHEMREG1	Private Water Supply Chemistry Audit Monitoring - Regulatory	A sampling kit containing the appropriate bottles will be provided to you on request
PWSCHEMREG2	Private Water Supply Chemistry Check Monitoring - Regulatory	
RAT1/RA1	Renal Association Table 1	1000ml blue cap bottle (All RAT analysis can be tested from the same volume)
RAT2/RA2	Renal Association Table 2	
RAT3/RA3	Renal Association Table 3	
SPCH1A, SPCH2A or SPCH3 *	Swimming Pool Suites 1, 2 or 3 - Chemistry	2 x 1000ml blue cap bottle + 1 TOC Bottle + 1 THM Bottle (TOC & THM Bottles for SPCH1 and SPCH1A Suites Only)
STD	Closed System - Partial Chemistry	500ml blue cap bottle
TWCH	Thames Drinking Water - Chemistry	500ml blue cap bottle

* Please provide on-site free/total chlorine readings on the sample submission form.

For any analysis outside this bottle guide, please contact us on bottlerequests@latisscientific.co.uk or +44 (0)208 853 3900 (select Option 4).

For accreditation status of any analysis, please check our website or the following link

<http://www.ukas.com/services/accreditation-services/laboratory-accreditation-isoiec-17025>

Individual Chemistry Tests

All samples for chemical analysis should be stored and transported at a temperature between 2-8°C.

Please note that samples for the following chemical analyses have a holding time of 24hrs:

- Biochemical Oxygen Demand (BOD)
- Dissolved Oxygen
- Permanganate Value (PV)
- Nitrite for Clean/Potable Waters
- Oxygen Saturation

Test Name	Recommended Sample Volume
ICP Metals (Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, Hg, K, Li, Mg, Mn, Mo, Na, Ni, Pb, P, Sb, Se, Si, Sn, Ti, Tl, V & Zn)	100ml blue cap bottle
Calculations using ICP Metals - P as PO ₄ , P as P ₂ O ₅ , P as H ₃ PO ₄ , Si as SiO ₂ , Si as SiO ₃ & B as B ₂ O ₃	100ml blue cap bottle
Heavy Metals	100ml blue cap bottle
Manual Alkalinity	200ml blue cap bottle
Alkalinity by Kapsap	100ml blue cap bottle
Ammoniacal Nitrogen as N	500ml blue cap bottle
Albuminoid Nitrogen as N	500ml blue cap bottle
Biochemical Oxygen Demand (BOD)	1000ml blue cap bottle
Biochemical Oxygen Demand (BOD) - Settled	1000ml blue cap bottle
Routine Anions by IC - Br, Cl, F, NO ₂ as N, NO ₂ as NO ₂ , NO ₂ as NaNO ₂ , NO ₃ as N, NO ₃ as NO ₃ , NO ₃ as NaNO ₃ , SO ₄	50ml blue cap bottle
Non-routine Anions by IC - BrO ₃ , ClO ₂ , ClO ₃	50ml blue cap bottle
Total, Free and Combined Bromine	50ml blue cap bottle
Total or Free Cyanide	25ml blue cap bottle
Total, Filtered or Settled Chemical Oxygen Demand (COD) - Open Digestion	100ml blue cap bottle
Total, Filtered or Settled Chemical Oxygen Demand (COD) - Closed Digestion	100ml blue cap bottle
Cyanuric Acid	50ml blue cap bottle
Total, Free and Combined Chlorine	50ml blue cap bottle
Dissolved Oxygen (DO)	One full Dissolved Oxygen Bottle
Oxygen Saturation *	One full Dissolved Oxygen Bottle
Dissolved Oxygen by DO Probe (process waters)	80ml blue cap bottle
Oxygen Saturation by DO Probe (process waters) *	80ml blue cap bottle
Anionic, Cationic, Ionic, Non-ionic Detergents by Titration	100ml blue cap bottle per detergent type

* Please provide on-site temperature reading on the sample submission form

Individual Chemistry Tests (2)

Test Name	Recommended Sample Volume
Dichlorophen	25ml blue cap bottle
Electrical Conductivity (EC) @ 20°C or 25°C	50ml blue cap bottle
Monoethylene Glycol (MEG) - By Specific Gravity	100ml blue cap bottle
Monoethylene Glycol (MEG) - Refractometer	50ml blue cap bottle
Formaldehyde	250ml blue cap bottle
Isothiazalone, Total	50ml blue cap bottle
Molybdate by Molybdenum by ICP	25ml blue cap bottle
Nitrite as N or NO ₂ by Colourimetry (low level, non-process waters)	100ml blue cap bottle
Total, Saponifiable and Unsaponifiable Oil & Grease	200ml Amber Glass bottle
Oxidisable Substances	200ml blue cap bottle
Propylene Glycol - By Specific Gravity	100ml blue cap bottle
Permanganate Value (PV)	200ml blue cap bottle
Total Phenols	50ml blue cap bottle
Total Inorganic and/or Orthophosphate as P or PO ₄	100ml blue cap bottle
Residue on Evaporation	250ml blue cap bottle
Total or Soluble Silicate by colour	100ml blue cap bottle
Total Dissolved Solids (TDS) - Meter	50ml blue cap bottle
Total Dissolved Solids (TDS) @ 105°C	250ml blue cap bottle
Total Solids (TS), Suspended Solids @ 105°C (SS)	250ml blue cap bottle per solids type
Settleable Solids, Rapidly Settleable Solids	1000ml blue cap bottle
Non Volatile Solids (NVS), Volatile Solids, Volatile Suspended Solids (VSS)	250ml blue cap bottle per solids type
Total Dissolved Solids (TDS) by Kapsap	50ml blue cap bottle
Available Sulphur Dioxide by IC	200ml in Sulphur dioxide fixed bottle + 200ml in blue cap bottle
Sulphide as H ₂ S, Free Hydrogen Sulphide, Sulphide as S ²⁻	500ml in Sulphide fixed bottle
Sulphite as Na ₂ SO ₃	200ml blue cap bottle
Tannin	500ml blue cap bottle
Turbidity	50ml blue cap bottle
pH @ 20°C or 25°C by Meter	50ml blue cap bottle
pH by Kapsap	50ml blue cap bottle
Taste	500ml blue cap bottle + 500ml red cap bottle for micro analysis Please refer to 'Sample Submission for Taste' (page 9)
Appearance	25ml blue cap bottle
Hardness	50ml blue cap bottle
Hardness for purified waters	250ml blue cap bottle

Sample Submission for Taste

For the laboratory to perform taste analysis we kindly ask that when taking and submitting samples, the following criteria are met:

- The sample is taken from a source covered by the European Drinking Water Council Directive 98/83/EC and from a point that would normally supply drinking water e.g. kitchen/bathroom sink tap, drinking water fountain or private water supplies for human consumption at the point of use.
- Bottle water is submitted as supplied to the user, within the expiration date and sealed.
- An additional sample is provided from the same sample point or bottled water batch for microbiological analysis to be undertaken.
- The sample should be delivered on the day of sampling, or at the latest within 24 hours, to allow the laboratory to perform additional quality checks and carry out the taste analysis within the required three day holding time. Samples received exceeding 24 hours from sampling will not be analysed for taste.
- The sample bottle is clearly labelled and all corresponding paperwork legible, as the laboratory will not perform analysis if the sample matrix and relevant details are not provided.

The laboratory will not perform taste analysis on the following samples:

- Samples from taps that would not normally be used for drinking water e.g. garden, cleaner's cupboard, garage, toilet, wash hand basin taps.
- Samples that are from new mains connections which may be contaminated with residues arising from construction or disinfection of the system.
- Samples taken from water storage tanks.

Following the receipt of a sample which meets the required criteria, taste analysis will only be performed by the laboratory if the below water quality parameters are achieved:

Potable water:

- Coliforms/E. coli result of 0cfu/100ml
- TVC37°C / 48h result of <1000cfu/ml
- pH in the range of 6.5 – 9.0
- Electrical Conductivity of <2500µS/cm
- Colourless and clear appearance without visual solids
- No odour (a slight chlorine odour is acceptable for a potable water)

Bottled water:

- Coliforms/E. coli result of 0cfu/250ml
- TVC37°C / 24h result of <500cfu/ml
- Colourless and clear appearance without visual solids
- No odour.

Sample Bottles and other consumables

Consumable Orders

Sample bottles can be ordered through our consumables team who can be contacted on:

- 020 8853 3900 (option 4)
- bottlerequests@latisscientific.co.uk.

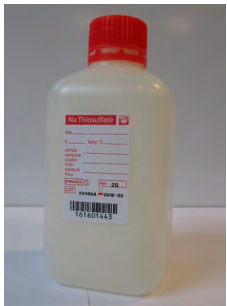
In order to process your requests efficiently, please kindly provide us with the following information:

- Number of bottles required
- Type of bottle required or analysis to be undertaken
- For bottle deliveries, address and contact name/number
- For bottle collection, please specify Latis location you would like to collect from

Please allow 2 working days for all bottle requests to be completed

Bottle Types

The majority of the tests we carry out are processed from the following types of bottles. Please refer to the Required Volumes section of this document in order to select the correct bottle for each suite/test.



Red cap Microbiology Bottle

These sterile bottles are dosed with sodium thiosulphate to neutralise oxidising biocides, and are available in 1L, 500ml and 250ml.



Blue cap Chemistry Bottle

These sterile plastic bottles are suitable for a wide range of chemical analysis and as well as microbiological analyses on waters which do not contain oxidising biocides. The bottles are available in 1L and 500ml.

High Dose Sodium Thiosulphate Bottle

Bottles for sampling silver-copper ionisation systems are available for a small fee; prices available on request. Please allow a week for bottle delivery.

Sample Bottles and other consumables

Endotoxin vial

These vials are used exclusively for Endotoxin sampling.



Chemistry Bottle

Bottles are available in 500ml and 1L

Organic Chemistry Bottle

Please contact our consumables team for information on subcontracted organic chemistry bottles types. All samples which require analysis for volatile matter (VOC, SVOC, TOC, THM etc) should be taken without head-space.

Dosed Chemistry Bottles

A number of other containers are used for preserving analytes within the sample collected. Please carefully note the safety instructions which should be provided on the bottle labels the following bottles are dosed with chemicals which are corrosive and/or toxic.

Cyanide Analysis Bottle

Plastic bottles are dosed with 5M Sodium Hydroxide solution to ensure any Cyanide present in the sample water is preserved until analysis commences.

Sulphide Analysis Bottle

Plastic bottles are dosed with Zinc Acetate solution to ensure any Sulphide present in the sample water is preserved until analysis commences.

Sulphur Dioxide Analysis Bottle

Two plastic bottles are required; one undosed and the other dosed with 30% Hydrogen Peroxide solution.

Sample Bottles and other consumables



Dissolved Oxygen (DO) Bottle

This bottle is used exclusively for Dissolved Oxygen Analysis and is supplied with a quantity of Manganous Sulphate and Potassium Iodide/Azide preservatives and plastic pipettes. The bottle must be filled to the brim, with 2ml of each preservative added using the plastic pipettes and then capped. Detailed sampling instructions are provided with the bottles.

Plates

Plates are available in 2 sizes: 55mm plates suitable for surface sampling or for active air sampling, and 90mm plates suitable for settle air sampling. Both types come in irradiated packs of 10.

Unless otherwise specified, plates will be provided as a set of Tryptone Soy Agar (TSA) and Sabouraud Dextrose Agar (SDA). Please check the information printed on the plates and ensure that each location is sampled using both types of agar plates.



Tryptone Soy Agar (TSA)

Used for Total Viable Count (TVC) analysis



Sabouraud Dextrose Agar (SDA)

Used for Moulds/ Yeast analysis

Swabs

Surface sampling swabs are available in three types: 'Black/charcoal' swabs for legionella analysis, 'Blue' swabs for all other microbiological analyses, and a 'non-media' swab for chemical analysis.



Blue Swab



Black/Charcoal Swab