

# RECOMMENDED PRESERVATION AND CONTAINER GUIDE

- **► AQUEOUS** (Non-Chlorinated)
- **► AQUEOUS** (Chlorinated)
- **S** WASTE OIL

At Eurofins Environment Testing, we are committed to the highest standards of sample integrity and analytical reliability. From collection through to laboratory receipt, every step in the sample handling process plays a critical role in ensuring accurate and defensible results. To support this, we respectfully request that you adhere to the following best practices when preparing and submitting samples.



#### SAMPLE COLLECTION CONSIDERATIONS

Care must be taken during sampling to prevent loss or cross-contamination of preservation reagents. Any spillage or inadvertent transfer of preservatives between containers may alter the chemical composition of the sample and compromise the validity of results, particularly for multi-parameter testing. Many analytes are susceptible to degradation, volatilisation, or chemical transformation when exposed to air, light, or temperature fluctuations. Where applicable, appropriate field filtration, immediate sealing, and light protection should be implemented to maintain sample stability.



#### **COOLING AND TRANSPORTATION REQUIREMENTS**

To ensure the stability of sensitive analytes, all samples should be chilled to ≤6°C immediately after collection and maintained at this temperature throughout transportation to the laboratory. Upon arrival, the surface temperature of each sample is measured using a calibrated infrared thermometer, recorded on the Chain of Custody (COC) form, and logged into our Laboratory Information Management System (ELVIS). Please note: Temperature blanks (control bottles for verifying temperature conditions during transport) are generally not required unless explicitly requested, such as in specific microbiological analyses of drinking water.



#### CONTAINER SELECTION, PRESERVATION, AND HOLDING TIME COMPLIANCE

The preservation of analyte integrity requires strict adherence to specified protocols regarding container type, preservation method (e.g., acidification, cooling), and maximum holding times, which are calculated from the moment of sample collection. Eurofins provides detailed guidance on container selection, preservative requirements, sample volume, and holding time limits for each analytical parameter. For specific test groups, such as metals, nutrients, and volatile organic compounds (VOCs), mandatory requirements include pH adjustment and refrigeration.



#### **SUBMISSION TIMING AND LOGISTICS**

To support timely and valid analysis, we recommend that samples arrive at the laboratory with at least 50% of their allowable holding time remaining. This buffer helps ensure that results remain scientifically defensible and compliant with regulatory standards. For parameters with short holding times, we kindly ask that samples not be submitted late on Fridays or immediately before weekends, unless prior arrangements have been made with the laboratory.

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#### **AQUEOUS SAMPLES (NON-CHLORINATED: GROUNDWATER, SURFACE WATER, WASTE WATER)**

Parameter	Container Type	Lab Analysis Portion (2)	Eurofins Preferred Preservation		mended Time (12)
1.4-Dioxane	G	200 mL	Sodium bisulfate (NaHSO₄), Cool ≤6°C	28	days
Acidity	Р	50 mL	Unpreserved, Cool ≤6°C	14	days **
Adsorbable Organofluorine (AOF)	PET / HDPE	3x 125 mL (13)	Unpreserved, Cool ≤6°C, No Teflon (PTFE) liner	28	days (11)
Alcohols (Ethanol, Methanol)	PT	2x 40 mL (13)	pH <2 (HCI), Cool ≤6°C, Zero headspace <sup>(7) (8)</sup>	14	days (3)
Alkalinity	Р	50 mL	Unpreserved, Cool ≤6°C	14	days **
Biochemical Oxygen Demand (BOD)	Р	500 mL (13)	Unpreserved, Cool ≤6°C, Zero headspace	48	hours
Bromide	Р	50 mL	Dark, Unpreserved, Cool ≤6°C	28	days
Carbon Dioxide (Total)	Р	50 mL	Unpreserved, Cool ≤6°C		Note (5)
Carbon, Dissolved Organic (DOC)	G	40 mL	Field filter (0.45 μm), pH <2 (H₂SO₄), Cool ≤6°C	28	days
Carbon, Total Organic (TOC)	G	40 mL	pH<2 (H <sub>2</sub> SO <sub>4</sub> ), Cool ≤6°C	28	days
Cations (Na, Mg, K, Ca) / Hardness	Р	50 mL	pH<2 (HNO₃), Cool ≤6°C	6	months
Cations (Na, Mg, K, Ca) / Hardness	Р	50 mL	Unpreserved, Cool ≤6°C	7	days
Chemical Oxygen Demand (COD)	G	100 mL	pH <2 (H <sub>2</sub> SO <sub>4</sub> ), Cool ≤6°C <sup>(1)</sup>	28	days (1)
Chloride	Р	50 mL	Unpreserved, Cool ≤6°C	28	days
Chlorine (Residual)	Р	50 mL	Unpreserved, Cool ≤6°C		Note (5)
Chlorophyll a	Р	1000 mL (13)	Dark, Unpreserved, Unfiltered, Cool ≤6°C	48	hours ##
Chlorophyll a	Р	1000 mL (13)	Dark, Unpreserved, MgSO <sub>4</sub> Field filter (0.45 or 0.7 µm), Freeze "residue" ≤-20°C <sup>(10)</sup>	28	days
Colour	Р	50 mL	Dark, Unpreserved, Cool ≤6°C	2	days
Conductivity (EC) / Salinity	Р	50 mL	Unpreserved, Cool ≤6°C	28	days

### **NOTES**

- (1) This test may not require preservation if received and analysed within 24 hours of sampling; this must be pre-arranged with the laboratory.
- (2) The specified sample volume is based on the amount sufficient for a single test, not the capacity of the sample containers provided by Eurofins. We recommend that you provide additional sample on the 1st, 11th, 21st, 31st etc sample for performance of Duplicates / Matrix Spikes. (Note however that Matrix Spike determinations are not appropriate for all tests).
- (3) US EPA recommends 14 days, Australian Standard recommends 7 days.
- (4) Ferrous Iron samples must be field filtered.
- (5) This analyte should be determined in the field, these tests will not be measured for compliance to holding time but are analysed on receipt
- (6) Holding Time is reduced to 24hrs with the presence of sulfides. Contact the laboratory if the presence of sulfides is suspected
- (7) Sodium bisulfate is an alternative preservation for VOC analysis upon request
- (8) If residual chlorine is present then add 0.008% w/v Na2S2O3
- (9) Contact the laboratory for instructions.
- (10) Do not fill the bottle past the shoulder, to allow room for expansion during frozen storage.
- (11) When stored at 0 6 °C and protected from the light with the caveat that issues were observed with certain perfluorooctane sulfonamide ethanols and perfluorooctane after 7 days. These issues are more likely to elevate the observed concentrations of other PFAS compounds via the transformation of these precursors if they are present in the sample.
- (12) References: APHA, US EPA SW846, ISO 5667.3, EPA VIC. IWRG701 and AS/NZS 5667.1 US EPA Methods 537.1, 533 & 1633A.
- (13) Whole bottle extraction is required.
- Requires the samples to be extracted within 7 days and the extract analysed within 40 days.
- \*\* Eurofins | Environment Testing aim is to perform these analyses within 2 days (where sufficient time available).
- ## The holding times may be extended to 28 days if the sample is filtered then frozen.
- Excepting vinyl chloride, styrene or 2-chloroethyl vinyl ether, for which the holding time is 7 days with the same preservation

- Plastic (HDPE or equivalent, all Teflon lined
- PT Purge & Trap 40 mL VOA
  Vial (with Teflon liner)
- PET Plastic
- (polyethyleneterephthalate)
- PP Plastic (polypropylene, No Teflon liner)
- G Glass (all Teflon lined)
  PET/S Plastic Sterile
- PS Polystyrene Vial

Parameter	Container Type	Lab Analysis Portion (2)		Eurofins Preferred Preservation		mended g Time (12)
Cyanides						
Cyanide (Amenable)	Р	60 mL		Dark, pH >12 (NaOH), Cool ≤6°C	14	days (1) (6)
Cyanide (Free)	Р	60 mL		Dark, Neutral pH, Cool ≤6°C	14	days (6) ##
Cyanide (Total)	Р	60 mL		Dark, pH >12 (NaOH), Cool ≤6°C	14	days (1) (6)
Cyanide (WAD)	Р	60 mL		Dark, pH >12 (NaOH), Cool ≤6°C	14	days (1) (6) ##
Dioxins & Furans / Dioxin-like PCBs	G	1000 mL		Unpreserved, Cool ≤6°C (8)	12	months
Ethylenediaminetetraacetic acid (EDTA) & Nitrilotriacetic acid (NTA)	G	100 mL		Unpreserved, Cool ≤6°C	7	days
Explosives	G	100 mL		Unpreserved, Cool ≤6°C	7	days *
Ferrous Iron (4)	Р	60 mL		Field filter (0.45 µm), pH <2 (HCl), Dark, Cool ≤6°C, Zero Headspace	7	days
Fluoride	Р	50 mL		Unpreserved, Cool ≤6°C	28	days
Formaldehyde	G	100 mL		Unpreserved, Cool ≤6°C	7	days
Glycols	G	200 mL		Unpreserved, Cool ≤6°C	14	days
Glyphosate, AMPA & Glufosinate	G	50 mL		Unpreserved, Cool ≤6°C (8)	14	days
Halo-Acetic Acids (HAA)	G	50 mL	$\bigcirc$	NH <sub>4</sub> Cl, Dark, Cool ≤6°C, Zero Headspace	14	days
Hexavalent Chromium (Cr6+)	Р	60 mL		Unpreserved, Cool ≤6°C	1	day
Hexavalent Chromium (Cr <sup>6+</sup> )	Р	60 mL		pH >12 (NaOH), Cool ≤6°C <sup>(1)</sup>	28	days (1)
lodide	Р	50 mL		Unpreserved, Cool ≤6°C	1	month
Ion Balance	Р	500-1000 mL		Refer to Cations, Fluoride, Chloride, Sulfate, Ar	mmonia, TDS	S (EC), Nitrate

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- 9

Parameter	Container Type	Lab Analysis Portion (2)	Eurofins Preferred Preservation	Recommended Holding Time (12)
Metals / Metalloids				
Metals (Mercury) – Dissolved	Р	50 mL	Field filter (0.45 μm), pH<2 (HNO <sub>3</sub> ), Coo	ol ≤6°C 28 days
Metals (Mercury) – Total (Recoverable)	Р	50 mL	pH<2 (HNO₃), Cool ≤6°C	28 days
Metals (Other) – Dissolved	Р	50 mL	Field filter (0.45 μm), pH<2 (HNO <sub>3</sub> ), Coo	ol ≤6°C 6 months
Metals (Other) – Total (Recoverable)	Р	50 mL	pH <2 (HNO₃), Cool ≤6°C	6 months
Methane	PT	2x 40 mL (13)	pH <2 (HCl), Cool ≤6°C, Zero headspace	pe (7) (8) 14 days
Methyl-tert-Butyl Ether (MTBE)	PT	2x 40 mL (13)	pH <2 (HCl), Cool ≤6°C, Zero headspace	ce <sup>(7) (8)</sup> 14 days
Microbiological Analysis				
Micro – E. Coli	PET/S	100 mL	Sterile, Unpreserved, Cool ≤6°C (€	3) 24 hours
Micro – Coliforms	PET/S	100 mL	Sterile, Unpreserved, Cool ≤6°C (8	3) 24 hours
Micro – Endotoxins	PS	30 mL	Non-Pyrogenic, Unpreserved, Cool ≤6	°C <sup>(8)</sup> 24 hours
Micro – Free-Living Amoebae (including Naegleria Speciation)	PET/S	250 mL	Sterile, Unpreserved, Ambient Tempera	ture <sup>(8)</sup> 3 days
Micro - Other Microbiological Test	PET/S	100 mL	Sterile, Unpreserved, Cool ≤6°C (8	3) 24 hours
Microplastics	G	1000 mL	Unpreserved, Metal Lids	N/A
Monochloramine	Р	50 mL	Unpreserved, Cool ≤6°C	24 hours
Nitrogen				
Nitrogen – Ammonia	Р	60 mL	pH <2 (H <sub>2</sub> SO <sub>4</sub> ), Cool ≤6°C <sup>(1)</sup>	28 days
Nitrogen – Ammonia	Р	60 mL	Field filter (0.45 µm), Unpreserved	l, 28 days

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Nitrogen – Nitrite	Р	60 mL	Unpreserved, Cool ≤6°C	2 days
Nitrogen – NOx	Р	60 mL	pH<2 (H <sub>2</sub> SO <sub>4</sub> ), Cool ≤6°C <sup>(1)</sup>	28 days
Nitrogen – NOx	Р	60 mL	Field filter (0.45 µm), Unpreserved, Freeze ≤-20°C (10)	28 days
Nitrogen – TKN	Р	60 mL	pH<2 (H <sub>2</sub> SO <sub>4</sub> ), Cool ≤6°C <sup>(1)</sup>	28 days
Nitrogen – TKN	Р	60 mL	Field filter (0.45 µm), Unpreserved, Freeze ≤-20°C (¹0)	28 days
Nitrogen – Total N	Р	60 mL	Refer to TKN and NOx	28 days
Nitrosamines	G	100 mL	Unpreserved, Cool ≤6°C	7 days
Oil & Grease	G	2x 250 mL (10)	pH <2 (H <sub>2</sub> SO <sub>4</sub> ), Cool ≤6°C	28 days
Organophosphorus Pesticides (OPP)	G	200 mL	Unpreserved, Cool ≤6°C (8)	7 days
Oxygen, Dissolved	Р	50 mL	Unpreserved, Cool ≤6°C, Zero headspace	Note (5)
Per- and Polyfluoroalkyl Substances (PFAS)	PP / HDPE	4x 125 mL (13)	Unpreserved, Cool ≤6°C, No Teflon (PTFE) liner	28 days (11)
Per- and Polyfluoroalkyl Substances (PFAS)	PP / HDPE	4x 125 mL (13)	Unpreserved, Freeze ≤-20°C, No Teflon (PTFE) liner (¹0)	90 days
рН	Р	50 mL	Unpreserved, Cool ≤6°C	Note (5)
Pharmaceuticals and Personal Care Products (PPCP)	Р	1000 mL	Unpreserved, Cool ≤6°C	7 days
Phenolics (Total)	Р	100 mL	pH <2 (H <sub>2</sub> SO <sub>4</sub> ), Cool ≤6°C	28 days
Phenoxy Acid Herbicides	G	100 mL	Unpreserved, Cool ≤6°C (8)	7 days
Phosphorus				
Phosphate (Reactive)	Р	50 mL	Unpreserved, Cool ≤6°C	2 days ##

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### **CONTAINERS**

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- PET Plastic

(polyethyleneterephthalate)

- PP Plastic (polypropylene, No Teflon liner)
- G Glass (all Teflon lined)
  PET/S Plastic Sterile
- PS Polystyrene Vial

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Parameter	Container Type	Lab Analysis Portion (2)	Eurofins Preferred Preservation		mended Time (12)
Phosphate (Reactive)	Р	50 mL	Field filter (0.45 μm), Unpreserved, Freeze ≤-20°C (10)	28	days
Phosphate (Total)	Р	60 mL	pH <2 (H <sub>2</sub> SO <sub>4</sub> ), Cool ≤6°C	28	days
Polybrominated Diphenyl Ethers (PBDE)	G	1000 mL	Unpreserved, Cool ≤6°C (8)	12	months
Polychlorinated Biphenyls (PCB) Aroclors	G	100 mL	Unpreserved, Cool ≤6°C (8)	7	days *
Semi-Volatile Organic Compounds (SVOC)	G	200 mL	Unpreserved, Cool ≤6°C (8)	7	days *
Organochlorine Pesticides (OCP)	G	100 mL	Unpreserved, Cool ≤6°C (8)	7	days *
Phenols – Speciated	G	100 mL	Unpreserved, Cool ≤6°C (8)	7	days *
Phthalate Esters	G	100 mL	Unpreserved, Cool ≤6°C (8)	7	days *
Polycyclic Aromatic Hydrocarbons (PAH)	G	100 mL	Unpreserved, Cool ≤6°C (8)	7	days *
Semi-Volatile Chlorinated Hydrocarbons	G	100 mL	Unpreserved, Cool ≤6°C (8)	7	days *
Semi-Volatile Organic Compounds – Other	G	200mL	Unpreserved, Cool ≤6°C (8)	7	days *
Silica Reactive	Р	100 mL	Unpreserved, Cool ≤6°C	5	days
Solids					
Solids, Total	Р	100 mL	Unpreserved, Cool ≤6°C	7	days *
Solids, Total Dissolved	Р	100 mL	Unpreserved, Cool ≤6°C	7	days *
Solids, Total Suspended	Р	100 mL	Unpreserved, Cool ≤6°C	7	days *
Sulfur					
Sulfate	Р	50 mL	Unpreserved, Cool ≤6°C	28	days

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Sulfide (Total)	Р	60 mL	pH >9 (Zinc Acetate+NaOH), Cool ≤6°C, Zero headspace	7 days *
Sulfide (Dissolved)	Р	60 mL	Unpreserved, Cool ≤6°C	24 hours
Sulfite	Р	60 mL	EDTA, Cool ≤6°C, Zero Headspace	2 days
Surfactants (Anionic) (MBAS)	G	50 mL	Unpreserved, Cool ≤6°C	2 days
Total Recoverable Hydrocarbons (TRH)				
TRH (C <sub>6</sub> -C <sub>9</sub> ) / TRH (C <sub>6</sub> -C <sub>10</sub> ) / BTEXN	PT	2x 40 mL (13)	pH <2 (HCl), Cool ≤6°C, Zero headspace (7) (8)	14 days (3)
TRH (>C <sub>10</sub> -C <sub>40</sub> )	G	100 mL	Unpreserved, Cool ≤6°C (8)	7 days *
Total Recoverable Hydrocarbons (TRH) with Silica Gel Clean-up	G	100 mL	Unpreserved, Cool ≤6°C (8)	7 days *
Tributyltin (TBT)	G	1000 mL	Unpreserved, Cool ≤6°C	7 days *
Turbidity	Р	100 mL	Dark, Unpreserved, Cool ≤6°C	48 hours
Volatile Fatty Acids (VFA)	G	50 mL	Unpreserved, Cool ≤6°C	28 days
Volatile Organic Compounds (VOC)	PT	2x 40 mL (13)	pH <2 (HCl), Cool ≤6°C, Zero headspace (7) (8)	14 days (3) ^
BTEXN	PT	2x 40 mL (13)	pH <2 (HCl), Cool ≤6°C, Zero headspace (7) (8)	14 days (3)
Halogenated Volatile Organics (HALVOL)	PT	2x 40 mL (13)	pH <2 (HCl), Cool ≤6°C, Zero headspace (7) (8)	14 days (3) ^
Monocyclic Aromatic Hydrocarbons	PT	2x 40 mL (13)	pH <2 (HCl), Cool ≤6°C, Zero headspace (7) (8)	14 days (3)
Trihalomethanes (THM)	PT	2x 40 mL (13)	pH <2 (HCl), Cool ≤6°C, Zero headspace (7) (8)	14 days <sup>(3)</sup>
Volatile Organic Compounds – Other	PT	2x 40 mL (13)	pH <2 (HCl), Cool ≤6°C, Zero headspace <sup>(7) (8)</sup>	14 days (3)
$\label{eq:TRHC6-C10} \mbox{TRH $C_6$-$C$_{10}$/ BTEX for Trip Spikes / Blanks} - \mbox{Prepared in the Lab}$	PT	40 mL <sup>(13)</sup>	pH <2 (HCl), Cool ≤6°C, Zero headspace <sup>(7)</sup> (8)	14 days <sup>(3)</sup>

- (1) This test may not require preservation if received and analysed within 24 hours of sampling; this must be pre-arranged with the laboratory.
- (2) The specified sample volume is based on the amount sufficient for a single test, not the capacity of the sample containers provided by Eurofins. We recommend that you provide additional sample on the 1st, 11th, 21st, 31st etc sample for performance of Duplicates / Matrix Spikes. (Note however that Matrix Spike determinations are not appropriate for all tests).
- (3) US EPA recommends 14 days, Australian Standard recommends 7 days.
- (4) Ferrous Iron samples must be field filtered.
- (5) This analyte should be determined in the field, these tests will not be measured for compliance to holding time but are analysed on receipt
- (6) Holding Time is reduced to 24hrs with the presence of sulfides. Contact the laboratory if the presence of sulfides is suspected
- (7) Sodium bisulfate is an alternative preservation for VOC analysis upon request
- (8) If residual chlorine is present then add 0.008% w/v Na2S2O3
- (9) Contact the laboratory for instructions.
- (10) Do not fill the bottle past the shoulder, to allow room for expansion during frozen storage.
- (11) When stored at 0 6 °C and protected from the light with the caveat that issues were observed with certain perfluorooctane sulfonamide ethanols and perfluorooctane after 7 days. These issues are more likely to elevate the observed concentrations of other PFAS compounds via the transformation of these precursors if they are present in the sample.
- (12) References: APHA, US EPA SW846, ISO 5667.3, EPA VIC. IWRG701 and AS/NZS 5667.1 US EPA Methods 537.1, 533 & 1633A.
- (13) Whole bottle extraction is required.
- Requires the samples to be extracted within 7 days and the extract analysed within 40 days.
- \*\* Eurofins | Environment Testing aim is to perform these analyses within 2 days (where sufficient time available).
- ## The holding times may be extended to 28 days if the sample is filtered then frozen.
- Excepting vinyl chloride, styrene or 2-chloroethyl vinyl ether, for which the holding time is 7 days with the same preservation

- Plastic (HDPE or equivalent, all Teflon lined
- PT Purge & Trap 40 mL VOA Vial (with Teflon liner)
- PET Plastic
  - (polyethyleneterephthalate)
- PP Plastic (polypropylene, No Teflon liner)
- G Glass (all Teflon lined)
  PET/S Plastic Sterile
- PS Polystyrene Vial

#### **AQUEOUS SAMPLES (CHLORINATED: DRINKING WATER, COOLING TOWER WATER, SWIMMING POOL WATER)**

Parameter	Container Type	Lab Analysis Portion (2)	Eurofins Preferred Preservation	Recommended Holding Time (12)
Glyphosate, AMPA & Glufosinate	G	50 mL	Sodium thiosulfate (Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> ), Cool ≤6°C	14 days
Microbiological Analysis				
Micro – E. Coli	PET/S	100 mL	Sterile, Sodium thiosulfate (Na₂S₂O₃), Cool ≤6°C	24 hours
Micro – Coliforms	PET/S	100 mL	Sterile, Sodium thiosulfate (Na₂S₂O₃), Cool ≤6°C	24 hours
Micro – Other Microbiological Test	PET/S	100 mL	Sterile, Sodium thiosulfate (Na₂S₂O₃), Cool ≤6°C	24 hours

### OIL SAMPLES (TRANSFORMER OIL, CAPACITOR OIL, HYDRAULIC OIL, HEAT TRANSFER OIL, DIESEL, LNAPL)

Parameter	Container Type	Lab Analysis Portion (2)	Eurofins Preferred Preservation	Recommended Holding Time (12)
Polychlorinated Biphenyls (PCB)	G	20 mL	Unpreserved, Cool ≤6°C	14 days*(9)
Total Recoverable Hydrocarbons (TRH)  – Fingerprint Identification	G	100 mL	Unpreserved, Cool ≤6°C	7 days <sup>(9)</sup>

### **NOTES**

- (1) This test may not require preservation if received and analysed within 24 hours of sampling; this must be pre-arranged with the laboratory.
- (2) The specified sample volume is based on the amount sufficient for a single test, not the capacity of the sample containers provided by Eurofins. We recommend that you provide additional sample on the 1st, 11th, 21st, 31st etc sample for performance of Duplicates / Matrix Spikes. (Note however that Matrix Spike determinations are not appropriate for all tests).
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- (11) When stored at 0 6 °C and protected from the light with the caveat that issues were observed with certain perfluorooctane sulfonamide ethanols and perfluorooctane after 7 days. These issues are more likely to elevate the observed concentrations of other PFAS compounds via the transformation of these precursors if they are present in the sample.
- (12) References: APHA, US EPA SW846, ISO 5667.3, EPA VIC. IWRG701 and AS/NZS 5667.1 US EPA Methods 537.1, 533 & 1633A.
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- PET Plastic
- (polyethyleneterephthalate)
  PP Plastic (polypropylene, No
- Teflon liner)
  G Glass (all Teflon lined)
  PET/S Plastic Sterile
- PS Plastic Sterile
  PS Polystyrene Vial



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