



Regulation 61: How ALS can Support Testing Requirements for PFAS

Regulation 61 notices have recently been served to many airports across the UK over recent months under the Environmental Permitting Regulations 2016. These have been specifically focused on per-and-polyfluoroalkyl substances (PFAS) and a range of other potential pollutants which may include hydrocarbons, pesticides, herbicides, ammonia, Biological Oxygen Demand, and other inorganic and organic parameters.

Here is how ALS can help.

With any new regulation it is always advisable to partner with a reputable laboratory that can help you ensure compliance for yourself or your end client. ALS prides itself on offering a service that you can rely on with an experienced technical and client-facing team who are familiar with the requirements of these notices and can support you in understanding permit requirements.

PFAS Requirements

Per- and polyfluoroalkyl substances (PFAS) have become a major focus of worldwide concern including here in the UK. PFAS are a group of active constituents in aqueous film forming foams (AFFF). Because of the extensive historic use of AFFF at airport sites, during emergency response and training, there is a requirement to analyse discharges to determine concentrations of PFAS.

As our understanding of the presence, toxicity and potential effects of this group of emerging contaminants continues to advance the demands for

PFAS analysis continues to increase. ALS remains one of the global leaders in this field and is responding to the changing regulatory and analytical requirements of PFAS testing.

Why ALS?

ALS Laboratories has vast experience in working with the aviation industry globally and has a detailed understanding of the requirements of Environmental Permits.

With Regulation 61, the assessment of PFAS is vital and presents unique challenges. It is therefore essential to partner with a laboratory with experience in analysing such samples to ensure sites are properly characterised using the most advanced analytical techniques available. We provide a high-quality and cost-effective solution to meet your PFAS testing needs.

Sampling Requirements and Laboratory Analysis

ALS can now offer the following suite (TM 434) which is fully compliant with the requirements of Annex I of



the Regulation 61 notice (see Table 1). Samples are extracted using solid phase extraction (SPE) and analysed by liquid chromatography coupled with a triple quadrupole mass spectrometer (LC-MS/MS).

Samples should be collected using digitubes which help to minimise effects from analyte sorption on sample containers as analysis is carried out of the entire sample including the container rinsate. ALS offer sampling guidance documents to support with your sampling and can offer technical support at every step of the process.

Contact Us

For more details about how ALS can help with this, or any other analysis please contact our Client Services team on the details below.

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Table 1 PFAS Broad Suite (TM 434)

| No. | PFAS | CAS No. | PFAS Category | Units | LODs |
|-----|--------------|-------------|---------------|-------|------|
| 1 | PFDA | 335-76-2 | PFCA | ng/L | 2 |
| 2 | PFUnA | 2058-94-8 | PFCA | ng/L | 2 |
| 3 | PFDoA | 307-55-1 | PFCA | ng/L | 2 |
| 4 | PFTTrDA | 72629-94-8 | PFCA | ng/L | 3 |
| 5 | PFTeA | 376-06-7 | PFCA | ng/L | 1 |
| 5 | PFHxDA | 67905-19-5 | PFCA | ng/L | 1 |
| 6 | PFODA | 16517-11-6 | PFCA | ng/L | 1 |
| 7 | PFBS | 375-73-5 | PFSA | ng/L | 1 |
| 8 | PFPeS | 2706-91-4 | PFSA | ng/L | 1 |
| 9 | PFHpS | 375-92-8 | PFSA | ng/L | 1 |
| 10 | PFNS | 68259-12-1 | PFSA | ng/L | 1 |
| 11 | PFDS | 335-77-3 | PFSA | ng/L | 2 |
| 12 | PFUnDS | 749786-16-1 | PFSA | ng/L | 2 |
| 13 | PFDoS | 79780-39-5 | PFSA | ng/L | 2 |
| 14 | HFPO-DA | 13252-13-6 | PFECA | ng/L | 2 |
| 15 | HFPO-TA | 13252-14-7 | PFECA | ng/L | 5 |
| 16 | ADONA | 919005-14-4 | PFECA | ng/L | 1 |
| 17 | PFMOPrA | 377-73-1 | PFECA | ng/L | 1 |
| 18 | NFDHA | 151772-58-6 | PFECA | ng/L | 3 |
| 19 | PFMOBA | 863090-89-5 | PFECA | ng/L | 1 |
| 20 | PFecHS | 133201-07-7 | PFECHS | ng/L | 1 |
| 21 | 3:3 FTCA | 356-02-5 | FTCA | ng/L | 2 |
| 22 | 5:3 FTCA | 914637-49-3 | FTCA | ng/L | 5 |
| 23 | 7:3 FTCA | 812-70-4 | FTCA | ng/L | 5 |
| 24 | PFEESA | 113507-82-7 | PFESA | ng/L | 1 |
| 25 | 9CI-PF3ONS | 756426-58-1 | CI-PFESA | ng/L | 1 |
| 26 | 11CI-PF3OUdS | 763051-92-9 | CI-PFESA | ng/L | 2 |
| 27 | 4:2 FTS | 757124-72-4 | FTSA | ng/L | 1 |
| 28 | 8:2 FTS | 39108-34-4 | FTSA | ng/L | 2 |
| 29 | FBSA | 30334-69-1 | FASA | ng/L | 2 |

Table 1 PFAS Broad Suite (TM 434) continued

| No. | PFAS | CAS No. | PFAS Category | Units | LODs |
|-----|---------------|-------------|---------------|-------|------|
| 30 | FHxSA | 41997-13-1 | FASA | ng/L | 1 |
| 31 | PFOSA | 754-91-6 | FASA | ng/L | 1 |
| 32 | N-MeFOSA | 31506-32-8 | FASA | ng/L | 1 |
| 33 | N-EtFOSA | 4151-50-2 | FASA | ng/L | 1 |
| 34 | MeFOSE | 24448-09-7 | FASE | ng/L | 10 |
| 35 | EtFOSE | 1691-99-2 | FASE | ng/L | 10 |
| 36 | MeFOSAA | 2355-31-9 | FASAA | ng/L | 2 |
| 37 | EtFOSAA | 2991-50-6 | FASAA | ng/L | 2 |
| 38 | PFBA | 375-22-4 | PFCA | ng/L | 2 |
| 39 | PFPA | 2706-90-3 | PFCA | ng/L | 1 |
| 40 | PFHxA | 307-24-4 | PFCA | ng/L | 1 |
| 41 | PFHpA | 375-85-9 | PFCA | ng/L | 1 |
| 42 | PFOA | 335-67-1 | PFCA | ng/L | 0.65 |
| 43 | PFNA | 375-95-1 | PFCA | ng/L | 1 |
| 44 | PFHxS | 355-46-4 | PFSA | ng/L | 1 |
| 45 | Linear PFOS | 1763-23-1 | PFSA | ng/L | 0.65 |
| 46 | Branched PFOS | N/A | PFSA | ng/L | 0.65 |
| 47 | Total PFOS | N/A | PFSA | ng/L | 0.65 |
| 48 | PFTTrDS | 174675-49-1 | PFSA | ng/L | 2 |
| 49 | 6:2 FTS | 27619-97-2 | FTSA | ng/L | 1 |
| 50 | 6:2 FTAB | 34455-29-3 | FTAB | ng/L | 10 |

Appendix I: PFAS Sampling Considerations

Below is a summary of items that are likely to contain PFAS and therefore should not be used by staff conducting sampling and some acceptable substitutions.

| Not to be used | Acceptable alternative |
|---|---|
| Teflon™ tubing/equipment | HDPE tubing/equipment |
| Decon 90 | Ensure PFAS-free cleaning products (triple rinse de-con procedures with de-ionised water) |
| PTFE containers | HDPE or other lab approved containers – ensure they are not Teflon lined |
| Teflon Containers | HDPE or other approved containers |
| Re-use of equipment | De-contaminate any equipment which is re-used – collect equipment blanks |
| Water resistant or treated latex gloves | Powderless nitrile gloves |
| Re-use of gloves | Change gloves immediately before collecting each sample |
| Externally purchased de-ionised water | Use only PFAS-free de-ionised water provided by the lab for QC samples |