

Guidance Document – AGC Chemicals Europe Ltd

1. Quantification of PFAS releases to water

1.1 Screening

We require you to conduct screening to identify presence of PFAS compounds listed in Annex I in W1 effluent discharge. Please provide a breakdown of your chosen procedure for review before proceeding.

Minimum 2 samples required. [Assume 2x 24hr composite samples from W1 for screening](#)

1.2 Monitoring

Following the completion of screening phase and provision of screening results, any PFAS compounds listed in Annex I which identify as present in W1 effluent discharge will need further monitoring. We suggest the use of the EPA method for wastewater - [PFAS Analytical Methods Development and Sampling Research | US EPA](#) - or a similar methodology. Please provide a breakdown of your chosen procedure for us to review before proceeding.

We require you to monitor releases of PFAS compounds listed in Annex III from W1 effluent discharge point. You may wish to use existing procedures and techniques as required in site permit monitoring conditions.

[This will be a combination of internal/external testing, minimum 25% of analysis to be conducted externally \(to be agreed\).](#)

We require you to conduct Total Organofluorine (TOF) analysis to determine releases of all fluoroorganic compounds from W1 effluent discharge. Please provide a breakdown of your chosen procedure for us to review before proceeding. [External analysis](#)

All monitoring to take place at W1 effluent discharge point.

Please provide the flow rate from W1 effluent discharge point for each round of monitoring.

All monitoring is to take place over a 12 month period, minimum 24 samples from **each effluent discharge point** with a minimum of 2 samples taken per month. This will allow us to assess the seasonal variation of releases from **W1** effluent discharge point.

Each effluent discharge point = W1, W2, W3 (W4 is via W1) but next sentence only refers to W1? Please could you clarify? Assume 24hr composite sample from W1, we are reviewing what sampling would be possible at W2 and W3, if anything is possible this will be a spot sample only.

Is this just referring to W1 here?

Please provide **background chemical quality data at the discharge point** for each substance to be monitored. This will allow a more accurate assessment of the effect of these substances in the discharge on the receiving water. A minimum of 24 samples over a 12 month period should be provided along with a grid reference of the sample point. 2 samples per month. Please provide a breakdown of your chosen procedure for us to review before proceeding.

[Assume this is referring to spot samples of the River Wyre.](#)

[Clarification needed River Wyre sampled at discharge point where W1 is discharged to the river Wyre or sampled upstream of our inlet? High tide/low tide? Non tidal effluent samples up stream? i.e. River Wyre St Michaels? How far upstream?](#)

[Do the EA already have this data through EQS Water Quality data?](#)

[To be reviewed where we can we sample safely.](#)

[To discuss could the EA collect samples provide to AGC for analysis?](#)

[Need to confirm what chemical quality data is required? Just PFAS or others as well?](#)

1.3 Mass releases

We require you to provide annual mass releases for PFAS compounds listed in Annex II from W1 effluent discharge point. This can be completed by mass balance, or any other suitable method you wish to propose.

Mass balance and solubility data (i.e. some Annex II compounds are not soluble in water)

1.4 Surface water risk screening

Following the completion of the monitoring phase, you will need to complete a surface water risk screening assessment. Online guidance is available here (screening test: estuaries and coastal waters) - [Surface water pollution risk assessment for your environmental permit - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/surface-water-pollution-risk-assessment-for-your-environmental-permit). The Marine Modelling Team will provide further guidance if needed.

2. Quantification of PFAS releases to air

2.1 Screening

Propose that this 'aerial emission points' is SLG abated emission point A7 [Release from carbon adsorption unit (Solvent Recovery)]

We require you to conduct screening to identify presence of Perfluorobutanoic acid (PFBA) and Perfluorohexanoic acid (PFHxA) from aerial emission points. Please provide a breakdown of your chosen procedure for review before proceeding.

No method in this section but suggest using OTM-45 or similar as stated in 2.2 below.

Minimum 2 samples required.

2.2 Monitoring

AGC to confirm all specified permit emission points... (except general process vents and relief streams) A5 ARK Plant, A4 L168 Lubricant oven

We require you to monitor releases of PFAS compounds listed in Annex III from PTFE emissions points. Please provide a breakdown of your chosen procedure for review before proceeding.

We require you to monitor for 3,3,4,4,5,5,6,6-Nonafluorohexene - perfluorobutylethylene (PFBE) and Trideca-1,1,1,2,2,3,3,4,4,5,5,6,6-fluorohexane - 1H-perfluorohexane (1H-PFHx) [AC-2000] (C6H) releases from ETFE emission points. Please provide a breakdown of your chosen procedure for review before proceeding.

Propose that this is SLG abated emission point A7 [Release from carbon adsorption unit (Solvent Recovery)]

If screening phase identifies presence of PFBA or PFHxA, they may require further monitoring. We would suggest the use of OTM - 45 or a similar methodology. Please provide a breakdown of your chosen procedure for review before proceeding.

If a 24-hour analysis method is proposed, 4 samples will be required. If another method is proposed, we will need to reassess the number of samples required.

It is likely monitoring will be completed in 12 hour shifts, AGC to discuss with external monitoring team

2.3 Mass releases

Mass releases - no specification on what period - one off annual or ongoing? To be discussed and agreed.

We require you to provide annual mass releases for 1,1,1,2,2,3,3-Heptafluoro-3-[(trifluorovinyl)oxy]propane (PPVE) and Hexafluoropropylene (HFP) to air. This can be completed by mass balance, or any other suitable method you wish to propose.

2.4 Air Emissions Risk Assessment

Following the completion of the monitoring phase, you will need to complete an air emissions risk assessment. Online guidance is available here - [Air emissions risk assessment for your environmental permit - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit).

3. Other PFAS releases

Mass releases - no specification on what period - one off annual or ongoing? To be discussed and agreed.

Are the company aware of any PFAS, as defined by OECD but excluding fluoropolymers, other than the substances listed in Annexes I, II and III being released from the site to all media? If so, please provide details of annual mass releases for each substance. e.g. C9-C14, PFiB, anything we know about...

No method identified, assume mass balance will be ok.

"All media" refers to air, water, waste and product.

Why are the EA not interested in 'all media' for Annex I, II and III? e.g. not interested in C6H to waste?

4. Information regarding PFAS contamination, risks and impacts on site and in surrounding areas

We require you to provide copies of third-party prepared site survey reports produced between January 1st 2000 and DATE OF ISSUE which contain information regarding PFAS contamination, risks and impacts on site and in surrounding areas.

5. Proposals to reduce PFOA releases to water

We require you to provide proposals to reduce PFOA releases to water.

6. Proposals to reduce Perfluoro(2-ethoxy-2-fluoroethoxy)acetic acid ammonium salt [EEA-NH4 (SAA-1000) releases to water

We require you to provide proposals to reduce Perfluoro(2-ethoxy-2-fluoroethoxy)acetic acid ammonium salt [EEA-NH4] (SAA-1000) releases to water.

7. Historic information related to releases of PFOA from the site

We require you to provide total mass releases of PFOA to air, land, water and in products from first production on site to DATE OF ISSUE.

First production on site assume this refers to ICI date (not date when AGC took over)

8. Modelling of emissions from product dryer

We wish to model air dispersion of PFOA released from the product dryer. We are assuming emissions were from a single stack, if this is not correct, please let us know.

Please provide the following information:

- Stack height
 - Stack diameter
 - Stack temperature
 - Stack velocity
 - PFOA release rate
- To discuss and confirm 'product dryer' assume this is:
 - CD Ovens
 - Thermal treatment
 - L168 lubricant ovens
- And data required for pre the installation of ARK plant (A5)?

If exact information is not available, please provide a best estimate.

ANNEXES

ANNEX I

Analyte	CAS RN
Perfluoro-1-butanesulfonic acid (PFBS)	375-73-5
Perfluoro-1-pentanesulfonic acid (PFPeS)	2706-91-4
Perfluoro-1-hexanesulfonic acid (PFHxS)	355-46-4
Perfluoro-1-heptanesulfonic acid (PFHpS)	375-92-8
Perfluoro-1-octanesulfonic acid (PFOS)	1763-23-1
Perfluoro-1-nonanesulfonic acid (PFNS)	68259-12-1
Perfluoro-1-decanesulfonic acid (PFDS)	335-77-3
1H, 1H, 2H, 2H-perfluorohexane sulfonic acid (4:2 FTS)	757124-72-4
1H, 1H, 2H, 2H-perfluorooctane sulfonic acid (6:2 FTS)	27619-97-2
1H, 1H, 2H, 2H-perfluorodecane sulfonic acid (8:2 FTS)	39108-34-4
Perfluorobutanoic acid (PFBA)	375-22-4
Perfluoropentanoic acid (PFPeA)	2706-90-3
Perfluorohexanoic acid (PFHxA)	307-24-4
Perfluoroheptanoic acid (PFHpA)	375-85-9
Perfluorononanoic acid (PFNA)	375-95-1
Perfluorodecanoic acid (PFDA)	335-76-2
Perfluoroundecanoic acid (PFUnDA)	2058-94-8
Perfluorododecanoic acid (PFDoDA)	307-55-1
Perfluorotridecanoic acid (PFTrDA)	72629-94-8
Perfluorotetradecanoic acid (PFTeDA)	376-06-7

N-ethylperfluoro-1-octanesulfonamidoacetic acid (N-EtFOSAA)	2991-50-6
N-methylperfluoro-1-octanesulfonamidoacetic acid (N-MeFOSAA)	2355-31-9
Perfluoro-1-octanesulfonamide (PFOSA)	754-91-6

ANNEX II

Analyte	CAS RN
1,1,1,2,2,3,3-Heptafluoro-3-[(trifluorovinyl)oxy]propane (PPVE)	1623-05-8
3,3,4,4,5,5,6,6-Nonafluorohexene - also known as perfluorobutylethylene (PFBE)	19430-93-4
Trideca-1,1,1,2,2,3,3,4,4,5,5,6,6-fluorohexane - also known as 1H-perfluorohexane (1H-PFHx)	355-37-3
Hexafluoropropylene (HFP)	116-15-4

ANNEX III

Analyte	CAS RN
Perfluoro(2-ethoxy-2-fluoroethoxy)acetic acid ammonium salt [EEA-NH ₄] (SAA-1000)	908020-52-0
Perfluorooctanoic acid (PFOA)	335-67-1