Air & Stack Emissions (AIR PT) Individual Report

Round: AR033

AR0816 - SGS Galson

Issue Number: 1

Issued: 16/08/2019
Sample Details

Samples were despatched on 15 July 2019
The reporting deadline was 09 August 2019

The following samples were distributed in AIR Round 33:

**Sample 1**: 4 x 25 mm diameter mixed cellulose ester filter spiked with metal solutions plus 2 x blank filters.

**Sample 1A**: 4 x 37 mm diameter cellulose acetate “cassette capsule” spiked with metal solutions plus 2 x blank capsules

**Sample 1B**: 4 x 37 mm diameter mixed cellulose ester filters spiked with metal solutions plus 2 x blank filters

**Sample 1C**: 4 x 25 mm diameter ‘Zefon Disposable Inhalable Sampler’ mixed cellulose ester filter inserts spiked with metal solutions plus 2 x blank filter inserts

**Sample 2**: 4 x 25 mm diameter PVC filters (GLA5000) loaded with aerosolised quartz by employing the BCIRA respirable sampler (Higgins-Dewell design). One blank filter supplied for participants using XRD technique, up to four blank filters for participants using FTIR technique.

**Sample 2I**: 4 x 47 mm diameter quartz fibre filters spiked with anion solutions plus 2 x blank filters

**Sample 9**: 4 x 25 mm diameter NaOH treated Millipore PVDF filters spiked with Cr(VI) plus 2 x NaOH only blank filters.

**Sample 10B**: 1 x bulk lead-containing dust sample.

**Sample 18**: 4 x 25 mm diameter mixed cellulose ester filter spiked with beryllium solutions plus 2 x blank filters.

This scheme is managed and operated by LGC Standards Proficiency Testing and is supported through technical advice from HSL. The production of the materials provided for Samples 1, 1A, 1B, 1C, 2, 2I, 9, 10B and 18 in this round was undertaken by HSL.

Further information regarding assigned values, performance assessment and technical comments can be found under the individual sample and analyte results.

Please note: Not all the test materials / analytes in this proficiency testing scheme are included in our UKAS scope of accreditation. Please see the current Scheme Description for details of non-accredited items.

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The following samples were distributed in AIR Round 33:

**Sample 5**: 4 x charcoal filled glass sorbent tubes dynamically loaded from the gas phase (prepared in accordance with procedures set out in ISO 6145 part 4) for analysis by solvent desorption plus 4 x blank sorbent tubes. Two of these blank sorbent tubes are unopened to be used if required by participant for internal spike recovery tests

**Sample 6**: 4 x charcoal filled glass sorbent tubes dynamically loaded from the gas phase (prepared in accordance with procedures set out in ISO 6145 part 4) for analysis by solvent desorption plus 4 x blank sorbent tubes. Two of these blank sorbent tubes are unopened to be used if required by participant for internal spike recovery tests.

**Sample 7**: 4 x Tenax TA filled sorbent tubes (Perkin Elmer type 6.4mm OD, 5 mm ID and 90 mm long) dynamically loaded from the gas phase (prepared in accordance with procedures set out in ISO 6145 part 4) for analysis by thermal desorption plus 2 x blank sorbent tubes.

**Sample 8**: 4 x 25 mm diameter glass fibre filters (GFA) spiked with formaldehyde derivative, 2,4-DNPH derivatives, plus 3 x DNPH only treated blanks.

This scheme is managed and operated by LGC Standards Proficiency Testing and is supported through technical advice from HSL. The production of the materials provided for Samples 5, 6, 7 and 8 in this round was undertaken by HSL.

Further information regarding assigned values, performance assessment and technical comments can be found under the individual sample and analyte results.

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The following samples were distributed in AIR Round 33:

**Sample 11**: 4 x Palms-type diffusion tubes spiked with sodium nitrite as a surrogate for Nitrogen dioxide (NO₂)

**Sample 12**: 4 x Tenax TA filled sorbent tubes (Perkin Elmer type - 6.4mm OD, 5 mm ID and 90 mm long) dynamically loaded from the gas phase (prepared in accordance with procedures set out in ISO 6145 part 4) for analysis by thermal desorption plus 2 x blank sorbent tubes

**Sample 12A**: 4 x CarboPac X filled sorbent tubes (Perkin Elmer type - 6.4mm OD, 5mm ID and 90mm long) dynamically loaded from the gas phase (prepared in accordance with procedures set out in ISO 6145 part 4) for analysis by thermal desorption plus 2 x blank sorbent tubes

**Sample 14**: 4 x 47 mm diameter quartz fibre filters spiked with anion solutions plus 2 x blank filters

This scheme is managed and operated by LGC Standards Proficiency Testing and is supported through technical advice from HSL. The production of the materials provided for Samples 11, 12, 12A, and 14 in this round was undertaken by HSL.
Further information regarding assigned values, performance assessment and technical comments can be found under the individual sample and analyte results.

Please note: Not all the test materials / analytes in this proficiency testing scheme are included in our UKAS scope of accreditation. Please see the current Scheme Description for details of non-accredited items.

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The following samples were distributed in AIR Round 33:

**Sample 32:** 2 x variable volume 4% m/m potassium dichromate/20% m/m nitric acid impinger solution (prepared in accordance with BS EN 13211) containing mercury

**Sample 33:** 1 x variable volume 3.3% nitric acid impinger solution (prepared in accordance with BS EN 14385) containing trace elements

**Sample 36:** 1 x variable volume impinger solution (prepared using chloride-free reagents, in accordance with BS EN 1911-2) containing hydrogen chloride

**Sample 37:** 1 x variable volume 0.28% sulfuric acid impinger solution (prepared in accordance with US EPA method 26) containing ammonia

**Sample 38:** 1 x 47 mm diameter Quartz filter containing trace elements and fly ash (prepared in accordance with BS EN 14385)

Further information regarding assigned values, performance assessment and technical comments can be found under the individual sample and analyte results.

Please note: Not all the test materials / analytes in this proficiency testing scheme are included in our UKAS scope of accreditation. Please see the current Scheme Description for details of non-accredited items.

Samples were despatched on 15 July 2019
The reporting deadline was 09 August 2019

The following samples were distributed in AIR Round 33:

**Sample 21:** 4 x Tenax TA filled sorbent tubes (Perkin Elmer type - 6.4mm OD, 5 mm ID and 90 mm long) dynamically loaded from the gas phase (prepared in accordance with procedures set out in ISO 6145 part 4) for analysis by thermal desorption plus 2 x blank sorbent tubes.

**Sample 22:** 2 x Tenax TA filled sorbent tubes (Perkin Elmer type - 6.4mm OD, 5 mm ID and 90 mm long) dynamically loaded from the gas phase (prepared in accordance with procedures set out in ISO 6145 part 4) for analysis by thermal desorption plus 2 x blank sorbent tubes.

This scheme is managed and operated by LGC Standards Proficiency Testing and is supported through technical advice from HSL. The production of the materials provided for Samples 21 and 22 in this round was undertaken by HSL.

Further information regarding assigned values, performance assessment and technical comments can be found under the individual sample and analyte results.

Please note: Not all the test materials / analytes in this proficiency testing scheme are included in our UKAS scope of accreditation. Please see the current Scheme Description for details of non-accredited items.


Individual Report

This individual report contains a summary of all the results submitted and the performance assessment for your laboratory/individual analysts. Please note that the nominated results for each analyte are indicated by the blue highlight in the analyst field.

Full details of the scheme, sample types and data analysis can be found in the corresponding Main Report, along with any technical comments, if applicable. The main report is the definitive version.

If you have any questions regarding your results which are not answered in the Main Report, please contact us using the details provided on the front of the report. If you would like to order any samples for re-testing please visit our web shop at www.lgcstandards.com or contact your local LGC representative.

Results Summary

<table>
<thead>
<tr>
<th>Sample</th>
<th>Results Reported</th>
<th>Satisfactory Results</th>
<th>Questionable Results</th>
<th>Unsatisfactory Results</th>
<th>Not Assessed</th>
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<tbody>
<tr>
<td>PT-AR-12A.</td>
<td>16</td>
<td>4</td>
<td>0</td>
<td>0</td>
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<td>Round Total</td>
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<td>0</td>
<td>12</td>
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</table>

Result which are Not Assessed should be reviewed by comparing them with the assigned value and other relevant statistics given in the main report. Participants, according to their internal quality criteria, may consider Not Assessed results to be satisfactory, questionable or unsatisfactory. Further information regarding why results may not be assessed is given in the Scheme Information section of the main report.

Please note surplus PT samples are available as QC materials once the round has closed. These samples can be purchased at a reduced rate if you have taken this sample during the main round. Visit our web shop at www.lgcstandards.com and search for the sample you require.

No unsatisfactory results in this round

No questionable results in this round
<table>
<thead>
<tr>
<th>Analyte</th>
<th>Analyst</th>
<th>Method</th>
<th>Result</th>
<th>Units</th>
<th>Z Score</th>
<th>Assigned Value</th>
<th>Ux AV</th>
<th>SDPA</th>
<th>Exp SDPA</th>
<th>Number of results</th>
<th>Median</th>
<th>Mean</th>
<th>Robust SD</th>
<th>SD</th>
<th>Your Reference</th>
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<tbody>
<tr>
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<td>Lab Result</td>
<td>GC-MS</td>
<td>122.0</td>
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<td>-1.35*</td>
<td>138.7</td>
<td>6.7</td>
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<tr>
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</tbody>
</table>

* Please note, participant performance for this analyte has been assessed using a $z'$ score, rather than a $z$ score, in order to account for the measurement uncertainty of the assigned value which is not negligible when compared to the SDPA.