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SUPPLEMENTAL/BID BULLETIN NO. 1

Supply, Delivery, Installation and Commissioning of the One (1) Unit Gas Chromatograph with Single Quad Mass Spectrometer (GC-MS)

This Supplemental/Bid Bulletin No. **7221774-1** is issued to clarify/amend item/s in the issued **ITB No. EMB-GOODS-NCB-2020-0015**. This shall form an integral part of the bid documents.

Name of Project : ***Supply, Delivery, Installation and Commissioning of the One (1) Unit Gas Chromatograph with Single Quad Mass Spectrometer (GC-MS)***

Date : October 13, 2020

Announcing the clarification/amendment/correction on the issued bidding documents:

Old Requirements	New Requirements
Ion source temperature: 150 ^{O}C to 350 ^{O}C	Ion source temperature: at least 140 ^{O}C to at least 300 ^{O}C
with backflush feature to assist in stabilizing retention time stability, especially for matrices expected to contain high concentration of the target analytes (such as waste electronics)	with backflush feature to assist in stabilizing retention time stability, especially for matrices expected to contain high concentration of the target analytes (such as waste electronics); backflush feature must already be built-in in the unit
Software must have a capability to provide the Extracted Ion Current Profile (EICP) for each run	Software must have a capability to provide the Extracted Ion Current Profile (EICP) for each run or equivalent feature to EICP
Helium Gas (ultra-high purity), gas line, 2-stage gas regulator, and Helium gas purifier	Helium Gas (ultra-high purity) – at least 2 tanks gas line – at least 5 meters, stainless steel 2-stage gas regulator Helium gas purifier – at least 3 pieces
can be readily interfaced and is compatible with Teledyne AtomX Purge-and-Trap Sampler (with accessories for interfacing and connecting the GCMS and the P&T Sampler)	can be readily interfaced and is compatible with Teledyne AtomX Purge-and-Trap Sampler (with accessories for interfacing and connecting the GCMS and the P&T Sampler) complete with installation/connection kit
DFTPP Solution (3 ampules, 1 mL per ampule, 1000 ug/mL in acetone)	DFTPP Solution (3 ampules, 1 mL per ampule, 1000 ug/mL in acetone or other suitable base solvent

<table>
<tr>
<td>capable of meeting the required abundance criteria for a 50-ng injection of DFTPP as specified in US EPA Method TO-13A and US EPA 8270</td>
<td>
TABLE 3. DFTPP KEY IONS & ION ABUNDANCE CRITERIA
<table>
<tr><th>Mass</th><th>Ion Abundance Criteria</th></tr>
<tr><td>51</td><td>30 to 60% of mass 198</td></tr>
<tr><td>68
70</td><td>Less than 2% of mass 69
Less than 2% of mass 69</td></tr>
<tr><td>127</td><td>40 to 60% of mass 198</td></tr>
<tr><td>197
198
199</td><td>Less than 2% of mass 198
Base peak, 100% relative abundance
5 to 9% of mass 198</td></tr>
<tr><td>275</td><td>10 to 30% of mass 198</td></tr>
<tr><td>365</td><td>Greater than 1.0% of mass 198</td></tr>
<tr><td>441
442
443</td><td>Present but less than mass 443
40% of mass 198
17 to 23% of mass 442</td></tr>
</table>
DFTPP Criteria from TO-13A

DFTPP KEY IONS AND ION ABUNDANCE CRITERIA[a,b]
<table>
<tr><th>Mass</th><th>Ion Abundance Criteria</th></tr>
<tr><td>68</td><td><2% of m/z 69</td></tr>
<tr><td>69</td><td>Present</td></tr>
<tr><td>70</td><td><2% of m/z 69</td></tr>
<tr><td>197</td><td><2% of m/z 198</td></tr>
<tr><td>198</td><td>Base peak or present</td></tr>
<tr><td>199</td><td>5-9% of m/z 198</td></tr>
<tr><td>365</td><td>>1% of Base Peak</td></tr>
<tr><td>441</td><td><150% of m/z 443</td></tr>
<tr><td>442</td><td>Base peak or present</td></tr>
<tr><td>443</td><td>15-24% of m/z 442</td></tr>
</table>
DFTPP Criteria from US EPA 8270
</td>
</tr>
<tr>
<td>includes IQ, OQ, PQ upon delivery and installation of the equipment</td>
<td>includes IQ, OQ, PQ upon delivery and installation of the equipment; this must be traceable to the manufacturer requirements and must be provided with proper documentation</td>
</tr>
<tr>
<td>must be capable of split/splitless injection with inlet temperatures capable of reaching at least 250 to 300 ^{O}C</td>
<td>must be capable of split/ splitless injection with inlet temperatures capable of reaching at least 250 to 300 ^{o}C; GC unit must have two split/splitless inlets in its configuration.</td>
</tr>
</table>

<table>
<tr>
<td>at least one complete set each of PBB and PBDE standard solutions (internal standard, surrogate, calibration standard, matrix spiking standard, and technical decaBDE mix for PR-206 QC) as specified in Section 8 and 11.1 of IEC Method 62321-6:2015</td>
<td>at least one complete set each of PBB and PBDE standard solutions (internal standard, surrogate, calibration standard, matrix spiking standard, and technical decaBDE mix for PR-206 QC) as specified in Section 8 and 11.1 of IEC Method 62321-6:2015

Calibration standard composition:
<table>
<tr><th>PBB[a]</th><th>Compound name</th></tr>
<tr><td>BB-003</td><td>4-Bromo biphenyl</td></tr>
<tr><td>BB-015</td><td>4,4'-Dibromo biphenyl</td></tr>
<tr><td>BB-029</td><td>2,4,5-Tribromo biphenyl</td></tr>
<tr><td>BB-049</td><td>2,2',4,5'-Tetrabromo biphenyl</td></tr>
<tr><td>BB-077</td><td>3,3',4,4'-Tetrabromo biphenyl</td></tr>
<tr><td>BB-103</td><td>2,2',4,5',6-Pentabromo biphenyl</td></tr>
<tr><td>BB-153</td><td>2,2',4,4',5,5'-Hexabromo biphenyl</td></tr>
<tr><td>BB-169</td><td>3,3',4,4',5,5'-Hexabromo biphenyl</td></tr>
<tr><td>FR-250</td><td>Technical mixture of nonabromo biphenyl, octabromo biphenyl (80 %) and heptabromo biphenyl</td></tr>
<tr><td>BB-209</td><td>Decabromo biphenyl</td></tr>
<tr><td colspan="2"></td></tr>
<tr><th>PBDE[a]</th><td>Compound name</td></tr>
<tr><td>BDE-003</td><td>4-Bromo diphenyl ether</td></tr>
<tr><td>BDE-015</td><td>4,4'-Dibromo diphenyl ether</td></tr>
<tr><td>BDE-033</td><td>2',3,4-Tribromo diphenyl ether</td></tr>
<tr><td>BDE-028</td><td>2,4,4'-Tribromo diphenyl ether</td></tr>
<tr><td>BDE-047</td><td>2,2',4,4'-Tetrabromo diphenyl ether</td></tr>
<tr><td>BDE-099</td><td>2,2',4,4',5-Pentabromo diphenyl ether</td></tr>
<tr><td>BDE-100</td><td>2,2',4,4',6-Pentabromo diphenyl ether</td></tr>
<tr><td>BDE-153</td><td>2,2',4,4',5,5'-Hexabromo diphenyl ether</td></tr>
<tr><td>BDE-154</td><td>2,2',4,4',5,6'-Hexabromo diphenyl ether</td></tr>
<tr><td>BDE-183</td><td>2,2',3,4,4',5',6-Heptabromo diphenyl ether</td></tr>
<tr><td>BDE-203</td><td>2,2',3,4,4',5,5',6-Octabromo diphenyl ether</td></tr>
<tr><td>BDE-206</td><td>2,2',3,3',4,4',5,5',6-Nonabromo diphenyl ether</td></tr>
<tr><td>BDE-209</td><td>Decabromo diphenyl ether</td></tr>
<tr><td colspan="2">[a] Ballschmiter and Zell classification numbers have been used for PBBs and PBDEs.</td></tr>
</table>

Internal Standard – PCB 209

Surrogate Standard - 4, 4’-dibromooctafluorobiphenyl

Technical decaBDE mix, similar to Decabromodiphenyl Oxide (TBDE-83R) Great Lakes Chemical DE-83RTM or equivalent

Matrix Spiking Standard - containing a total of four calibration congener standards in toluene as indicated in Table 1 below:

Table 1 – Matrix spiking solution
<table>
<tr><th>Level of bromination</th><th>Number of PBDE congeners</th><th>Number of PBB congeners</th></tr>
<tr><td>Mono to penta</td><td>1</td><td>1</td></tr>
<tr><td>Hexa- to deca-</td><td>1</td><td>1</td></tr>
</table>
</td>
</tr>
<tr>
<td colspan="2">Additional requirement:
- Unit must be able to meet the Instrument Detection Limit (IDL) under ESI SIM of ≤10 fg using Octafluoronaphthalene (100 fg injection); this IDL must be demonstrated onsite upon installation of the unit.</td>
</tr>
</table>

For guidance and information of all concerned.

Digitally signed by
Magalang Albert
Altarejos
Date: 2020.10.13 21:49:41
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ALBERT A. MAGALANG
Chairperson
EMB Bids and Awards Committee

Received by the Bidder:

_____
Date: _____