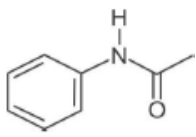
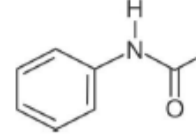
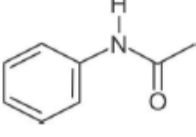
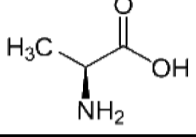
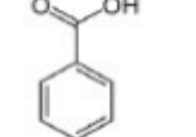
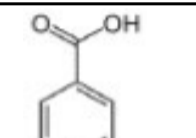
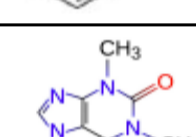
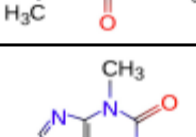
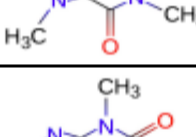
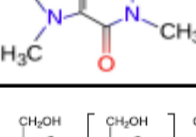
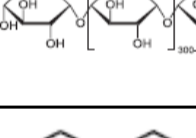
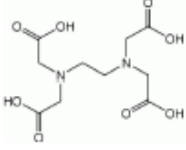
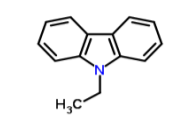
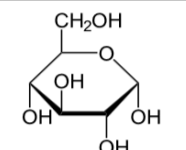
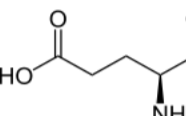
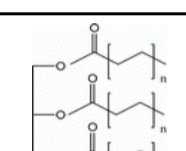
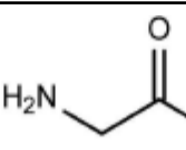
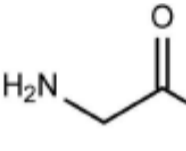
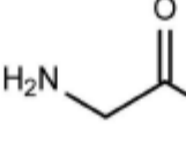
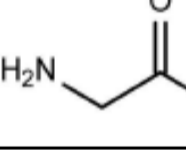
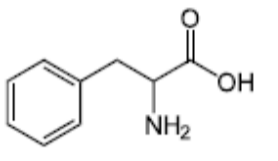
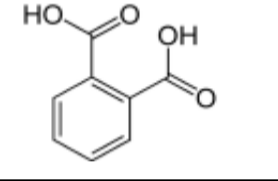
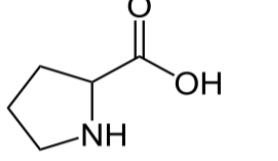
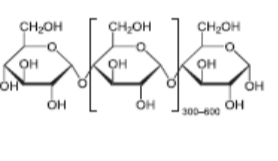
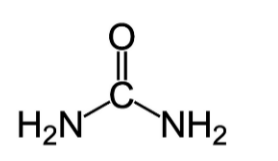
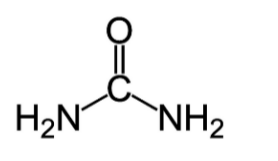
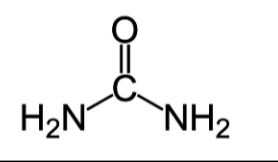
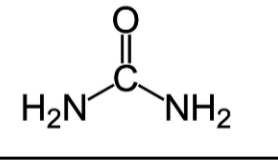
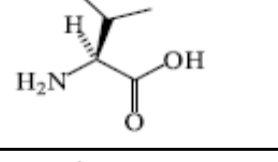
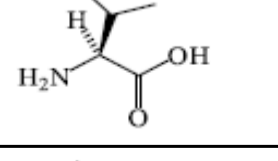
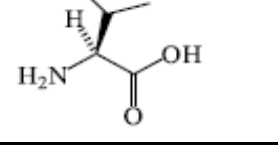


Version 23 February 2019 Materials for EA-IRMS formula, CAS #, purity, amount, type of packaging, price in US \$	Structure	$\delta^2\text{H}$ (or $\delta\text{D}$ ) (mean value in ‰ vs. VSMOW, $\pm 1\sigma$ ) (range) (# of measurements)	$\delta^{13}\text{C}$ (mean value in ‰ vs. VPDB, $\pm 1\sigma$ ) (range) (# of measurements)	$\delta^{15}\text{N}$ (mean value in ‰ vs. AIR, $\pm 1\sigma$ ) (range) (# of measurements)	$\delta^{18}\text{O}$ (mean value in ‰ vs. VSMOW, $\pm 1\sigma$ ) (range) (# of measurements)
<b>Acetanilide #1</b> , $\text{C}_8\text{H}_9\text{NO}$ , CAS # 103-84-4, in glass vial, 5 g US \$250, 2 g US \$150		not determined (contains exchangeable hydrogen)	<b>-29.53</b> $\pm$ 0.01 ‰ from -29.51 to -29.54 ‰ n = 6	<b>+1.18</b> $\pm$ 0.02 ‰ from +1.16 to +1.21 ‰ n = 4	not determined
<b>Acetanilide #2</b> , $\text{C}_8\text{H}_9\text{NO}$ , CAS # 103-84-4, in glass vial, 2 g US \$250		not determined (contains exchangeable hydrogen)	<b>-29.50</b> $\pm$ 0.02 ‰ from -29.48 to -29.53 ‰ n = 4	<b>+19.56</b> $\pm$ 0.03 ‰ from +19.53 to +19.60 ‰ n = 7	not determined
<b>Acetanilide #3</b> , $\text{C}_8\text{H}_9\text{NO}$ , CAS # 103-84-4, in glass vial, 2 g US \$250		not determined (contains exchangeable hydrogen)	<b>-29.50</b> $\pm$ 0.02 ‰ from -29.49 to -29.52 ‰ n = 4	<b>+40.57</b> $\pm$ 0.06 ‰ from +40.52 to +40.66 ‰ n = 6	not determined
<b>L-Alanine</b> , $\text{C}_3\text{H}_7\text{NO}_2$ , CAS # 56-41-7, produced by SI Science in Japan, 100 mg in crimp-sealed glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>-17.93</b> $\pm$ 0.02 ‰ from -17.90 to -17.96 ‰ n = 5	<b>+43.25</b> $\pm$ 0.07 ‰ from +43.16 to +43.34 ‰ n = 4	not determined
<b>Benzoic acid #A</b> , $\text{C}_7\text{H}_6\text{CO}_2$ , CAS # 65-85-0; inquire about availability		not determined (contains exchangeable hydrogen)	<b>-28.81</b> ‰ Coplen et al., 2006 <a href="http://dx.doi.org/10.1021/ac052027c">http://dx.doi.org/10.1021/ac052027c</a>	not applicable	<b>+23.14</b> $\pm$ 0.19 ‰ Brand et al., 2009 <a href="http://dx.doi.org/10.1002/rmcm.3958">http://dx.doi.org/10.1002/rmcm.3958</a>
<b>Benzoic acid #B</b> , $\text{C}_7\text{H}_6\text{CO}_2$ , enriched in $^{18}\text{O}$ , CAS # 65-85-0; inquire about availability		not determined (contains exchangeable hydrogen)	<b>-28.85</b> ‰ Coplen et al., 2006 <a href="http://dx.doi.org/10.1021/ac052027c">http://dx.doi.org/10.1021/ac052027c</a>	not applicable	<b>+71.28</b> $\pm$ 0.36 ‰ Brand et al., 2009 <a href="http://dx.doi.org/10.1002/rmcm.3958">http://dx.doi.org/10.1002/rmcm.3958</a>
<b>Caffeine #1, USGS61</b> , $\text{C}_8\text{H}_{10}\text{N}_4\text{O}_2$ , CAS # 58-08-2, $\geq 99\%$ , anhydrous, 500 mg in glass vial, US \$250		<b>+96.9</b> $\pm$ 0.9 ‰ n = 53 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-35.05</b> $\pm$ 0.04 ‰ n = 114 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-2.87</b> $\pm$ 0.04 ‰ n = 93 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not determined
<b>Caffeine #2, USGS62</b> , $\text{C}_8\text{H}_{10}\text{N}_4\text{O}_2$ , CAS # 58-08-2, $\geq 99\%$ , anhydrous, 500 mg in glass vial, US \$250		<b>-156.1</b> $\pm$ 2.1 ‰ n = 64 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-14.79</b> $\pm$ 0.04 ‰ n = 105 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>+20.17</b> $\pm$ 0.06 ‰ n = 96 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not determined
<b>Caffeine #3, USGS63</b> , $\text{C}_8\text{H}_{10}\text{N}_4\text{O}_2$ , CAS # 58-08-2, $\geq 99\%$ , anhydrous, 500 mg in glass vial, US \$250		<b>+174.5</b> $\pm$ 0.9 ‰ n = 55 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-1.17</b> $\pm$ 0.04 ‰ n = 103 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>+37.83</b> $\pm$ 0.06 ‰ n = 99 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not determined
<b>Corn starch</b> , $(\text{C}_6\text{H}_{10}\text{O}_5)_n$ , $\geq 99.5\%$ , CAS # 9005-25-8, 1 g in glass vial, US \$150.		not determined (contains exchangeable hydrogen)	<b>-11.01</b> $\pm$ 0.02 ‰ from -10.99 to -11.03 ‰ n = 4	not applicable	not determined
<b>Coumarin</b> , $\text{C}_9\text{H}_6\text{O}_2$ , $\geq 99.5\%$ , CAS # 91- 64-5, 100 mg in crimp-sealed glass vial, US \$250		<b>+82.3</b> $\pm$ 1.2 ‰ from +80.9 to +83.7 ‰ n = 4	<b>-35.60</b> $\pm$ 0.01 ‰ from -35.59 to -35.61 ‰ n = 3	not applicable	not determined
<b>Eicosanoic acid methyl ester (C20:0) #Y, methyl eicosanoate #Y</b> , $\text{C}_{21}\text{H}_{42}\text{O}_2$ , $\geq 99\%$ , CAS # 1120-28-1, at least 50 mg in sealed glass vial, US \$250	$\text{CH}_3(\text{CH}_2)_{18}\text{COOCH}_3$	<b>+3.7</b> $\pm$ 0.8 ‰ from +2.4 to +4.1 ‰ n = 4	<b>-0.73</b> $\pm$ 0.02 ‰ from -0.70 to -0.75 ‰ n = 4	not applicable	not determined
<b>Eicosanoic acid methyl ester (C20:0) #Z1, methyl eicosanoate #Z1, USGS70</b> , $\text{C}_{21}\text{H}_{42}\text{O}_2$ , $\geq 99.5\%$ , CAS # 1120-28-1, 100 mg in glass vial, US \$250	$\text{CH}_3(\text{CH}_2)_{18}\text{COOCH}_3$	<b>-183.9</b> $\pm$ 1.4 ‰ n = 116 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-30.53</b> $\pm$ 0.04 ‰ n = 77 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not applicable	not determined
<b>Eicosanoic acid methyl ester (C20:0) #Z2, methyl eicosanoate #Z2, USGS71</b> , $\text{C}_{21}\text{H}_{42}\text{O}_2$ , monoatomic $^2\text{H}$ and $^{13}\text{C}$ spikes in methyl group, $\geq 99.5\%$ , CAS # 1120-28-1, 100 mg in glass vial, US \$250	$\text{CH}_3(\text{CH}_2)_{18}\text{COOCH}_3$	<b>-4.9</b> $\pm$ 1.0 ‰ n = 118 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-10.50</b> $\pm$ 0.03 ‰ n = 65 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not applicable	not determined
<b>Eicosanoic acid methyl ester (C20:0) #Z3, methyl eicosanoate #Z3, USGS72</b> , $\text{C}_{21}\text{H}_{42}\text{O}_2$ , monoatomic $^2\text{H}$ and $^{13}\text{C}$ spikes in methyl group, $\geq 99.5\%$ , CAS # 1120-28-1, 100 mg in glass vial, US \$250	$\text{CH}_3(\text{CH}_2)_{18}\text{COOCH}_3$	<b>+348.3</b> $\pm$ 1.5 ‰ n = 130 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-1.54</b> $\pm$ 0.03 ‰ n = 62 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not applicable	not determined

Version 23 February 2019 Materials for EA-IRMS formula, CAS #, purity, amount, type of packaging, price in US \$	Structure	$\delta^2\text{H}$ (or $\delta\text{D}$ ) (mean value in ‰ vs. VSMOW, $\pm 1\sigma$ ) (range) (# of measurements)	$\delta^{13}\text{C}$ (mean value in ‰ vs. VPDB, $\pm 1\sigma$ ) (range) (# of measurements)	$\delta^{15}\text{N}$ (mean value in ‰ vs. AIR, $\pm 1\sigma$ ) (range) (# of measurements)	$\delta^{18}\text{O}$ (mean value in ‰ vs. VSMOW, $\pm 1\sigma$ ) (range) (# of measurements)
<b>EDTA #2, ethylene diamine tetraacetic acid</b> , $\text{C}_{10}\text{H}_{16}\text{N}_2\text{O}_8$ , CAS # 60-00-4, 99 %, 2 g in glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>-40.38</b> $\pm$ 0.01 ‰ from -40.37 to -40.38 ‰ n = 4	<b>-0.83</b> $\pm$ 0.04 ‰ from -0.78 to -0.88 ‰ n = 6	not determined
<b>9-Ethylcarbazole</b> , $\text{C}_{14}\text{H}_{13}\text{N}$ , $\geq 99.5$ %, CAS # 86-28-2, $\geq 200$ mg in crimp-sealed glass vial, US \$250		<b>-102.0</b> $\pm$ 1.1 ‰ from -100.6 to -103.6 ‰ n = 7	<b>-25.36</b> $\pm$ 0.02 ‰ from -25.35 to -25.39 ‰ n = 5	<b>+3.93</b> $\pm$ 0.06 ‰ from +3.87 to +4.00 ‰ n = 5	not applicable
<b>D-glucose</b> , $\text{C}_6\text{H}_{12}\text{O}_6$ , $\geq 99$ %, CAS # 50-99-7, produced by SI Science in Japan, 100 mg in crimp-sealed glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>-133.06</b> $\pm$ 0.1 ‰ from -132.96 to -133.16 ‰ n = 5	not applicable	not determined
<b>L-Glutamic acid</b> , $\geq 99.5$ %, CAS # 56-86-0, 2 g in glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>-28.60</b> $\pm$ 0.01 ‰ from -28.58 to -28.61 ‰ n = 5	<b>-2.38</b> $\pm$ 0.04 ‰ from -2.32 to -2.42 ‰ n = 4	not determined
<b>Glyceryl tripalmitate</b> , $\text{C}_{51}\text{H}_{98}\text{O}_5$ , $\geq 99.0$ %, CAS # 555-44-2, at least 5 mg in crimp-sealed glass vial, US \$250		<b>-215.1</b> $\pm$ 0.9 ‰ from -214.1 to -216.1 ‰ n = 4	<b>-30.12</b> $\pm$ 0.01 ‰ from -30.10 to -30.12 ‰ n = 3	not applicable	not determined
<b>Glycine #1, USGS64</b> , $\text{C}_2\text{H}_5\text{NO}_2$ , $\geq 99.5$ %, CAS # 56-40-6, 500 mg in glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>-40.81</b> $\pm$ 0.04 ‰ n = 89 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>+1.76</b> $\pm$ 0.06 ‰ n = 98 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not determined
<b>Glycine #2, USGS65</b> , $\text{C}_2\text{H}_5\text{NO}_2$ , $\geq 99.5$ %, CAS # 56-40-6, 500 mg in glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>-20.29</b> $\pm$ 0.04 ‰ n = 86 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>+20.68</b> $\pm$ 0.06 ‰ n = 92 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not determined
<b>Glycine #3, USGS66</b> , $\text{C}_2\text{H}_5\text{NO}_2$ , $\geq 99.5$ %, CAS # 56-40-6, 500 mg in glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>-0.67</b> $\pm$ 0.04 ‰ n = 96 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>+40.83</b> $\pm$ 0.06 ‰ n = 92 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not determined
<b>Glycine #4</b> , $\text{C}_2\text{H}_5\text{NO}_2$ , $\geq 99.5$ %, CAS # 56-40-6, produced by SI Science in Japan, $\geq 99.9$ % by $^1\text{H}$ NMR, 100 mg in crimp-sealed glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>-60.02</b> $\pm$ 0.02 ‰, from -60.00‰ to -60.06‰; n = 5	<b>-26.63</b> $\pm$ 0.02 ‰, from -26.61‰ to -26.65‰; n = 3	not determined
<b>Hexatriacontane #2, C36 n-alkane</b> , $\text{C}_{36}\text{H}_{74}$ , CAS # 630-06-8, 100 mg in crimp-sealed glass vial, US \$250	$\text{CH}_3(\text{CH}_2)_{34}\text{CH}_3$	<b>-259.2</b> $\pm$ 1.3 ‰ from -257.5 to -261.0 ‰ n = 7	<b>-29.95</b> $\pm$ 0.02 ‰ from -29.92 to -29.97 ‰ n = 8	not applicable	not applicable
<b>Icosanoic acid methyl ester (C20:0) #Y, methyl icosanoate #Y</b> , $\text{C}_{21}\text{H}_{42}\text{O}_2$ , $^2\text{H}$ and $^{13}\text{C}$ spikes in fatty acid: 1,1- ( $^2\text{H}_2$ ), 1- ( $^{13}\text{C}$ ), $\geq 99$ %, CAS # 1120-28-1, 50 mg in sealed glass vial, US \$250	$\text{CH}_3(\text{CH}_2)_{18}\text{COOCH}_3$	<b>+3.7</b> $\pm$ 0.8 ‰ from +2.4 to +4.1 ‰ n = 4	<b>-0.72</b> $\pm$ 0.02 ‰ from -0.70 to -0.74 ‰ n = 3	not applicable	not determined
<b>Icosanoic acid methyl ester (C20:0) #Z1, methyl icosanoate #Z1, USGS70</b> , $\text{C}_{21}\text{H}_{42}\text{O}_2$ , $\geq 99.5$ %, CAS # 1120-28-1, 100 mg in glass vial, US \$250	$\text{CH}_3(\text{CH}_2)_{18}\text{COOCH}_3$	<b>-183.9</b> $\pm$ 1.4 ‰ n = 116 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-30.53</b> $\pm$ 0.04 ‰ n = 77 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not applicable	not determined
<b>Icosanoic acid methyl ester (C20:0) #Z2, methyl icosanoate #Z2, USGS71</b> , $\text{C}_{21}\text{H}_{42}\text{O}_2$ , monoatomic $^2\text{H}$ and $^{13}\text{C}$ spikes in methyl group, $\geq 99.5$ %, CAS # 1120-28-1, 100 mg in glass vial, US \$250	$\text{CH}_3(\text{CH}_2)_{18}\text{COOCH}_3$	<b>-4.9</b> $\pm$ 1.0 ‰ n = 118 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-10.50</b> $\pm$ 0.03 ‰ n = 65 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not applicable	not determined
<b>Icosanoic acid methyl ester (C20:0) #Z3, methyl icosanoate #Z3, USGS72</b> , $\text{C}_{21}\text{H}_{42}\text{O}_2$ , monoatomic $^2\text{H}$ and $^{13}\text{C}$ spikes in methyl group, $\geq 99.5$ %, CAS # 1120-28-1, 100 mg in glass vial, US \$250	$\text{CH}_3(\text{CH}_2)_{18}\text{COOCH}_3$	<b>+348.3</b> $\pm$ 1.5 ‰ n = 130 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-1.54</b> $\pm$ 0.03 ‰ n = 62 ( <i>Anal. Chem.</i> , 2016, 88, 4294. <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not applicable	not determined



Version 23 February 2019 Materials for EA-IRMS formula, CAS #, purity, amount, type of packaging, price in US \$	Structure	$\delta^2\text{H}$ (or $\delta\text{D}$ ) (mean value in ‰ vs. VSMOW, $\pm 1\sigma$ ) (range) (# of measurements)	$\delta^{13}\text{C}$ (mean value in ‰ vs. VPDB, $\pm 1\sigma$ ) (range) (# of measurements)	$\delta^{15}\text{N}$ (mean value in ‰ vs. AIR, $\pm 1\sigma$ ) (range) (# of measurements)	$\delta^{18}\text{O}$ (mean value in ‰ vs. VSMOW, $\pm 1\sigma$ ) (range) (# of measurements)
Polyethylene powder, USGS77, low density, 1000 $\mu\text{m}$ , CAS # 9002-88-4, 1 g in glass vial, US \$250	$(\text{CH}_2\text{CH}_2)_n$	<b>-75.9 <math>\pm</math> 0.6 ‰</b> n = 199 <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-30.71 <math>\pm</math> 0.04 ‰</b> n = 81 <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not applicable	not applicable
Polyethylene line NDF-PE77 (extruded from powder USGS77; isotopically indistinguishable from powder), low density, CAS # 9002-88-4, contact Tamim Darwish (ndf-enquiries@ansto.gov.au)	$(\text{CH}_2\text{CH}_2)_n$	indistinguishable from USGS77 (see above) <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	indistinguishable from USGS77 (see above) <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not applicable	not applicable
L-Phenylalanine, $\text{C}_9\text{H}_9\text{NO}_2$ , $\geq 99.5\%$ , CAS # 63-91-2, produced by SI Science in Japan, 100 mg in crimp-sealed glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>-11.20 <math>\pm</math> 0.02 ‰</b> from -11.19 to -11.23 ‰ n = 6	<b>+1.70 <math>\pm</math> 0.06 ‰</b> from +1.64 to +1.77 ‰ n = 5	not determined
Phthalic acid #2, $\text{C}_8\text{H}_6\text{O}_4$ , CAS # 88-99-3, $\delta^2\text{H}$ measured in Na-phthalate to exclude carboxyl hydrogen. $\delta^{13}\text{C}$ measured in free acid. 3 g in glass vial, US \$250		<b>-81.9 <math>\pm</math> 1.2 ‰</b> from -81.8 to -83.0 ‰ n = 4	<b>-29.98 <math>\pm</math> 0.01 ‰</b> from -29.96 to -29.99 ‰ n = 3	not applicable	not determined
L-Proline, $\text{C}_5\text{H}_9\text{NO}_2$ , $\geq 99.5\%$ , CAS # 147-85-3, 100 mg in crimp-sealed glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>-12.47 <math>\pm</math> 0.01 ‰</b> from -12.45 to -12.49 ‰ n = 5	<b>-7.84 <math>\pm</math> 0.04 ‰</b> from -7.77 to -7.88 ‰ n = 5	not determined
Starch from corn, $(\text{C}_6\text{H}_{10}\text{O}_5)_n$ , $\geq 99.5\%$ , CAS # 9005-25-8, 1 g in glass vial, US \$150.		not determined (contains exchangeable hydrogen)	<b>-11.01 <math>\pm</math> 0.02 ‰</b> from -10.99 to -11.03 ‰ n = 4	not applicable	not determined
Urea #1, $\text{CH}_4\text{N}_2\text{O}$ , $\geq 99.5\%$ , CAS # 57-13-6, 2 g in glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>-34.13 <math>\pm</math> 0.03 ‰</b> from -34.17 to -34.09 ‰ n = 6	<b>+0.26 <math>\pm</math> 0.03 ‰</b> from +0.20 to +0.28 ‰ n = 7	not determined
Urea #2a, $\text{CH}_4\text{N}_2\text{O}$ , $\geq 99.5\%$ , CAS # 57-13-6, 2 g in glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>-9.14 <math>\pm</math> 0.02 ‰</b> from -9.11 to -9.17 ‰ n = 10	<b>+20.73 <math>\pm</math> 0.04 ‰</b> from +20.67 to +20.78 ‰ n = 9	not determined
Urea #3, $\text{CH}_4\text{N}_2\text{O}$ , $\geq 99.5\%$ , CAS # 57-13-6, 2 g in glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>+11.71 <math>\pm</math> 0.03 ‰</b> from +11.69 to +11.76 ‰ n = 6	<b>+40.61 <math>\pm</math> 0.02 ‰</b> from +40.58 to +40.63 ‰ n = 7	not determined
Urea #3a, $\text{CH}_4\text{N}_2\text{O}$ , $\geq 99.5\%$ , CAS # 57-13-6, 2 g in glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>+5.89 <math>\pm</math> 0.03 ‰</b> from +5.85 to +5.93 ‰ n = 5	<b>+42.05 <math>\pm</math> 0.03 ‰</b> from +42.02 to +42.10 ‰ n = 5	not determined
Vacuum pump oil #1, NBS 22a, 1 mL in sealed in glass amoule, US \$250	hydrocarbon mixture, vapor pressure @ 25 °C 0.000133 Pa, viscosity 65 cSt @ 40 °C, specific gravity 0.78 g/cm <sup>3</sup>	<b>-120.4 <math>\pm</math> 1.0 ‰</b> n = 203 <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-29.72 <math>\pm</math> 0.04 ‰</b> n = 103 <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not applicable	not applicable
Vacuum pump oil #2, USGS78, <sup>2</sup> H-spiked with perdeuterated n-tetracosane (99.1 atom % <sup>2</sup> H), 1 mL in sealed in glass amoule, US \$250	hydrocarbon mixture, vapor pressure @ 25 °C 0.000133 Pa, viscosity 65 cSt @ 40 °C, specific gravity 0.78 g/cm <sup>3</sup>	<b>+397.0 <math>\pm</math> 2.2 ‰</b> n = 200 <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-29.72 <math>\pm</math> 0.04 ‰</b> n = 80 <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not applicable	not applicable
L-Valine #1, USGS73, $\text{C}_5\text{H}_9\text{NO}_2$ , CAS # 516-06-3, 99 %, 500 mg in glass vial, US \$250		not determined (contains exchangeable hydrogen)	<b>-24.03 <math>\pm</math> 0.04 ‰</b> n = 130 <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>-5.21 <math>\pm</math> 0.05 ‰</b> n = 91 <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not determined
L-Valine #2, USGS74, $\text{C}_5\text{H}_9\text{NO}_2$ , CAS # 516-06-3, 99 %, 100 mg in glass vial, freeze-dried, US \$250		not determined (contains exchangeable hydrogen)	<b>-9.30 <math>\pm</math> 0.04 ‰</b> n = 94 <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>+30.19 <math>\pm</math> 0.07 ‰</b> n = 68 <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not determined
L-Valine #3, USGS75, $\text{C}_5\text{H}_9\text{NO}_2$ , CAS # 516-06-3, 99 %, 100 mg in glass vial, freeze-dried, US \$250		not determined (contains exchangeable hydrogen)	<b>+0.49 <math>\pm</math> 0.07 ‰</b> n = 23 <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	<b>+61.53 <math>\pm</math> 0.14 ‰</b> n = 29 <i>(Anal. Chem., 2016, 88, 4294.</i> <a href="http://dx.doi.org/10.1021/acs.analchem.5b04392">http://dx.doi.org/10.1021/acs.analchem.5b04392</a> )	not determined