Comments and Errata - Quantifying Uncertainty in Analytical Measurement, 3rd Edition (2012)

Page	Place	Published text	Replacement	Comment
46	Left column, close to bottom regarding $u(m_{KMP})$	$\sqrt{2\times(0.09^2)}$ = 0.13 mg	$\sqrt{2\times(0.087^2)} = 0.12\,\text{mg}$	0.13 mg is the correct rounded form for the formula $\sqrt{2\times(0.09^2)}$ (=0.127) However, the value of 0.09 is derived from $0.15/\sqrt{3} = 0.087$ and if this value were used without rounding, the standard uncertainty of the mass of KHP would be rounded to 0.12 mg.
55	Right column – equation at the bottom	$u(V_{HCl}) = \sqrt{0.0037^2 + 0.008^2 + 0.007^2}$ $\Rightarrow u(V_{HCl}) = 0.011\,\text{mL}$	$u(V_{HCl}) = \sqrt{0.008^2 + 0.007^2}$ $\Rightarrow u(V_{HCl}) = 0.011$ mL	Additional term incorrectly inserted in 2012 edition during formula editing. The rounded result of the calculation is unaffected.
66	right column, last line first paragraph	0.373/1.1111	0.377/1.1111	Typographical error

72-80	**Example A5**	**A number of issues affect Example A5, as follows:**		
72	Table A5-1 Column standard uncertainty	0.19	0.15	Standard uncertainty should be 0.15 for area not 0.19. (See amended Table A5.1 on page 3 This change carries through to subsequent tables, resulting in a combined standard uncertainty of 0.001438 mg dm^{-2} instead of 0.001465 mg dm^{-2}
72	Table A5-1 Column relative standard uncertainty	0.033	0.026	
72	Table A5-1 Column relative standard uncertainty	0.092	0.095	
77-78	Equations for linear calibration, esp. S_{XX}	Page 78, formula key: *i* index for the number of calibration standards	*i* is unused in the published formulae and calculations	The calculations are correctly implemented. However, the explanation of the calculations needs to be improved. The calculations were carried out on the mean results at each concentration of the calibration standard, so that *j*=1..5, rather than over individual observations, and this accounts for the value of 1.5 for S_{xx}. Use of the 15 individual results would lead to a different summed value for S_{xx}, and different values for *n* in the preceding calculations. This would be clearer if A_j and c_j in the calculation of *S* were replaced by mean values $\bar{A}_i$ and $\bar{c}_i$ for each concentration.
78	Left column, line 2 and line 3	units of mg L^{-1}	unit of absorbance	Units of *S* and *S*xx are absorbance, not concentration.
78	Section Area a_V	(2.77/2)	(2.70/2)	
78	Section Area a_V	$u(a_V)$ = …. = 0.19	$u(a_V)$ = …. = 0.15	
79	Table A5.3. column stand u	0.19 dm^3	0.15 dm^3	
80	Table A5.4. column E	10.01	5.73	
		0.27	0.15	
		5.92	5.88	
		-0.000483	-0.000384	
		2.34E-07	1.48E-07	

Table A5.1: Uncertainties in extractable cadmium determination

	Description	Value x	Standard uncertainty $u(x)$	Relative standard uncertainty $u(x)/x$
c_0	Content of cadmium in the extraction solution	0.26 mg L^{-1}	0.018 mg L^{-1}	0.069
d	Dilution factor (if used)	1.0 Note 1	0 Note 1	0 Note 1
V_L	Volume of the leachate	0.332 L	0.0018 L	0.0054
a_V	Surface area of the liquid	5.73 dm^2	0.~~19~~ 15 dm^2	0.~~033~~026
f_{acid}	Influence of the acid concentration	1.0	0.0008	0.0008
f_{time}	Influence of the duration	1.0	0.001	0.001
f_{temp}	Influence of temperature	1.0	0.06	0.06
r	Mass of cadmium leached per unit area	0.015 mg dm^{-2}	0.0014 mg dm^{-2}	0.095~~2~~

Note 1: No dilution was applied in the present example; d is accordingly exactly 1.0