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APPENDIX

Table A-1 Adsorption isotherm of CTAB at pH 5 I= 10 mM and pH 8 I = 10 mM.

pH5 I =10 mM		pH8 I =10 mM	
Adsorbed CTAB (μmol/gsilica)	Eq conc. μM	Adsorbed CTAB (μmol/gsilica)	Eq conc. μM
747.71	21307.32	876.89	18077.84
689.15	17771.13	897.57	12560.67
726.01	11849.83	907.87	7303.30
729.10	7772.39	920.00	2999.98
716.04	4099.09	962.37	940.70
789.29	1267.76	901.26	1468.60
753.08	1172.89	896.85	578.78
719.73	1006.73	865.86	353.40
686.23	844.35	833.16	171.04
674.24	144.01	783.66	408.47
635.44	113.88	744.87	378.16
595.71	107.20	717.46	63.47
555.27	118.17	678.50	37.60
477.44	64.12	558.59	35.20
397.61	59.83	478.93	26.76
357.70	57.55	399.02	24.57
238.01	49.72	359.06	23.45
78.20	45.00	239.16	20.90
34.41	39.66	79.29	17.71
22.43	39.15	35.34	16.44
10.57	35.70	23.35	16.27
		11.39	15.35

Table A-2 Adsolubilization of Toluene at pH 5 I = 10 mM Region I
Weight of silica = 15 g
Molecular Weight of Toluene = 92 g/mol
Equation from GC Y = 1.00E-07 X
Where X = Area of head space gas chomatography
Y = Equilibrium concentration of toluene
ρ (acetophenone) = 0.867 g/ml
Max adsorption = 24 μmol/ g silica

[Tol] initia (μl)	[Tol] initial g/l	[Tol] initial mol/L	Area at equilibrium	[Tol] eq (mol/l)	[Tol] ad (μmol/g silica	Xadmicelle	Xbulk	K
50	7.23E-02	7.85E-04	4.07E+05	4.42E-04	1.37E+01	3.64E-01	7.96E-06	4.57E+04
100	1.45E-01	1.57E-03	6.78E+05	7.37E-04	3.33E+01	5.81E-01	1.33E-05	4.38E+04
200	2.89E-01	3.14E-03	1.26E+06	1.37E-03	7.07E+01	7.46E-01	2.48E-05	3.02E+04
300	4.34E-01	4.71E-03	1.97E+06	2.14E-03	1.03E+02	8.11E-01	3.85E-05	2.11E+04
350	5.06E-01	5.50E-03	2.49E+06	2.70E-03	1.12E+02	8.23E-01	4.87E-05	1.69E+04

Table A-3 Adsolubilization of Toluene at pH 5 I = 10 mM Region II
Weight of silica = 15 g
Molecular Weight of Toluene = 92 g/mol
Equation from GC Y = 1.00E-07 X
Where X = Area of head space gas chomatography
Y = Equilibrium concentration of toluene
ρ (acetophenone) = 0.867 g/ml
Max adsorption = 360 μmol/ g silica

[Tol] initia (μl)	[Tol] initial g/l	[Tol] initial mol/L	Area at equilibrium	[Tol] eq (mol/l)	[Tol] ad (μmol/g silica	Xadmicelle	Xbulk	K
50	7.23E-02	7.85E-04	1.64E+05	1.78E-04	2.43E+01	6.32E-02	3.21E-06	1.97E+04
100	1.45E-01	1.57E-03	3.10E+05	3.36E-04	4.94E+01	1.21E-01	6.06E-06	1.99E+04
200	2.89E-01	3.14E-03	6.75E+05	7.33E-04	9.63E+01	2.11E-01	1.32E-05	1.60E+04
300	4.34E-01	4.71E-03	1.13E+06	1.23E-03	1.39E+02	2.79E-01	2.21E-05	1.27E+04
350	5.06E-01	5.50E-03	1.42E+06	1.55E-03	1.58E+02	3.05E-01	2.79E-05	1.09E+04

Table A-4 Adsolubilization of Toluene at pH 5 I = 10 mM Region III
Weight of silica = 15 g
Molecular Weight of Toluene = 92 g/mol
Equation from GC Y = 1.00E-07 X
Where X = Area of head space gas chomatography
Y = Equilibrium concentration of toluene
ρ (acetophenone) = 0.867 g/ml
Max adsorption = 700 μmol/ g silica

[Tol] initia (μl)	[Tol] initial g/l	[Tol] initial mol/L	Area at equilibrium	[Tol] eq (mol/l)	[Tol] ad (μmol/g silica	Xadmicelle	Xbulk	K
50	7.23E-02	7.85E-04	1.46E+05	1.58E-04	2.51E+01	3.46E-02	2.85E-06	1.21E+04
100	1.45E-01	1.57E-03	2.84E+05	3.09E-04	5.05E+01	6.72E-02	5.56E-06	1.21E+04
200	2.89E-01	3.14E-03	6.14E+05	6.68E-04	9.89E+01	1.24E-01	1.20E-05	1.03E+04
300	4.34E-01	4.71E-03	9.80E+05	1.07E-03	1.46E+02	1.72E-01	1.92E-05	8.99E+03
350	5.06E-01	5.50E-03	1.27E+06	1.38E-03	1.65E+02	1.90E-01	2.48E-05	7.67E+03

Table A-5 Adsolubilization of Acetophenone at pH 5 I = 10 mM Region I
Weight of silica = 15 g
Molecular Weight of Acetophenone = 120 g/mol
Equation Y = 0.0106X
where X= Absorbance
Y= Equilibrium concentration of acetophenone (g/l)
ρ (acetophenone) = 1.028 g/ml
Max adsorption = 24 μmol/ g silica

Ace] initia (μl)	[Ace] initial g/l	[Ace] initial mol/L	A	[Ace] eq (mol/l)	[Ace] eq (mmol/l)	[Ace] ad (μmol/g silica	Xadmicelle	Xbulk	K
100	1.71E-01	1.43E-03	5.61E-02	1.24E-03	1.24E+00	7.56E+00	2.39E-01	2.23E-05	1.07E+04
500	8.57E-01	7.14E-03	3.00E-01	6.62E-03	6.62E+00	2.10E+01	4.66E-01	1.19E-04	3.91E+03
1000	1.71E+00	1.43E-02	6.03E-01	1.33E-02	1.33E+01	3.82E+01	6.14E-01	2.40E-04	2.56E+03
1500	2.57E+00	2.14E-02	9.03E-01	2.00E-02	2.00E+01	5.86E+01	7.10E-01	3.60E-04	1.97E+03
2000	3.43E+00	2.86E-02	1.20E+00	2.64E-02	2.64E+01	8.62E+01	7.82E-01	4.76E-04	1.64E+03

Table A-6 Adsolubilization of Acetophenone at pH 5 I = 10 mM Region II
Weight of silica = 15 g
Molecular Weight of Acetophenone = 120 g/mol
Equation Y = 0.0106X
where X= Absorbance
Y= Equilibrium concentration of acetophenone (g/l)
ρ (acetophenone) = 1.028 g/ml
Max adsorption = 360 μmol/ g silica

Ace] initia (μl)	[Ace] initial g/l	[Ace] initial mol/L	A	[Ace] eq (mol/l)	[Ace] eq (mmol/l)	[Ace] ad (μmol/g silica	Xadmicelle	Xbulk	K
100	1.71E-01	1.43E-03	4.32E-02	9.55E-04	9.55E-01	1.89E+01	4.99E-02	1.72E-05	2.91E+03
500	8.57E-01	7.14E-03	2.45E-01	5.42E-03	5.42E+00	6.89E+01	1.61E-01	9.76E-05	1.65E+03
1000	1.71E+00	1.43E-02	5.16E-01	1.14E-02	1.14E+01	1.16E+02	2.43E-01	2.05E-04	1.18E+03
1500	2.57E+00	2.14E-02	7.56E-01	1.67E-02	1.67E+01	1.89E+02	3.44E-01	3.01E-04	1.14E+03
2000	3.43E+00	2.86E-02	9.86E-01	2.18E-02	2.18E+01	2.71E+02	4.30E-01	3.93E-04	1.09E+03

Table A-7 Adsolubilization of Acetophenone at pH 5 I = 10 mM Region III
Weight of silica = 15 g
Molecular Weight of Acetophenone = 120 g/mol
Equation Y = 0.0106X
where X= Absorbance
Y= Equilibrium concentration of acetophenone (g/l)
ρ (acetophenone) = 1.028 g/ml
Max adsorption = 900 μmol/ g silica

Ace] initia (μl)	[Ace] initial g/l	[Ace] initial mol/L	A	[Ace] eq (mol/l)	[Ace] eq (mmol/l)	[Ace] ad (μmol/g silica	Xadmicelle	Xbulk	K
100	1.71E-01	1.43E-03	4.28E-02	9.45E-04	9.45E-01	1.93E+01	2.68E-02	1.70E-05	1.58E+03
500	8.57E-01	7.14E-03	2.39E-01	5.27E-03	5.27E+00	7.47E+01	9.64E-02	9.49E-05	1.02E+03
1000	1.71E+00	1.43E-02	4.75E-01	1.05E-02	1.05E+01	1.51E+02	1.78E-01	1.89E-04	9.40E+02
1500	2.57E+00	2.14E-02	7.19E-01	1.59E-02	1.59E+01	2.22E+02	2.40E-01	2.86E-04	8.40E+02
2000	3.43E+00	2.86E-02	9.72E-01	2.15E-02	2.15E+01	2.84E+02	2.89E-01	3.87E-04	7.45E+02

Table A-8 Adsolubilization of Toluene with Acetophenone 0.714 mmol/l at pH5 Region I
weight of silica = 15 g
molecular weigth of toluene = 92
molecular weigth of acetophenone = 120
ρ (acetophenone) = 1.028 g/ml
ρ (toluene) = 0.867 g/ml
Equation (acetophenone) Y = 0.0106X Equation (toluene) Y= 1.00E-07X
Max adsorption = 24 micromole/g silica

[Tol] initial (µl)	[Tol] initial mol/L	Area at equilibrium	[Tol]eq (mol/L)	[Tol] ads (µmole/ g silica)	A	[Ace] eq mol/l	[Ace] ads (µmol/ g silica)	Xadmicelle	Xbulk	K
50	7.84E-04	3.57E+05	3.88E-04	1.58E+01	2.97E-02	6.56E-04	2.33E+00	3.76E-01	6.98E-06	5.38E+04
100	1.57E-03	6.89E+05	7.49E-04	3.28E+01	2.98E-02	6.58E-04	2.24E+00	5.55E-01	1.35E-05	4.12E+04
200	3.14E-03	1.35E+06	1.47E-03	6.66E+01	2.97E-02	6.56E-04	2.33E+00	7.17E-01	2.65E-05	2.70E+04
300	4.70E-03	1.99E+06	2.16E-03	1.02E+02	2.96E-02	6.54E-04	2.41E+00	7.94E-01	3.89E-05	2.04E+04
350	5.49E-03	2.48E+06	2.70E-03	1.12E+02	2.95E-02	6.51E-04	2.50E+00	8.08E-01	4.86E-05	1.66E+04

Table A-9 Adsolubilization of Toluene with Acetophenone 0.714 mmol/l at pH5 Region II
weight of silica = 15 g
molecular weigth of toluene = 92
molecular weigth of acetophenone = 120
ρ (acetophenone) = 1.028 g/ml
ρ (toluene) = 0.867 g/ml
Equation (acetophenone) Y = 0.0106X Equation (toluene) Y= 1.00E-07X
Max adsorption = 360 micromole/g silica

[Tol] initial (µl)	[Tol] initial mol/L	Area at equilibrium	[Tol]eq (mol/L)	[Tol] ads (µmole/ g silica)	A	[Ace] eq mol/l	[Ace] ads (µmol/ g silica)	Xadmicelle	Xbulk	K
50	7.84E-04	1.97E+05	2.14E-04	2.28E+01	2.25E-02	4.97E-04	8.69E+00	5.82E-02	3.86E-06	1.51E+04
100	1.57E-03	3.56E+05	3.87E-04	4.72E+01	2.24E-02	4.95E-04	8.77E+00	1.14E-01	6.97E-06	1.63E+04
200	3.14E-03	7.27E+05	7.91E-04	9.38E+01	2.25E-02	4.97E-04	8.69E+00	2.03E-01	1.42E-05	1.43E+04
300	4.70E-03	1.18E+06	1.28E-03	1.37E+02	2.23E-02	4.92E-04	8.86E+00	2.71E-01	2.31E-05	1.17E+04
350	5.49E-03	1.42E+06	1.54E-03	1.58E+02	2.24E-02	4.95E-04	8.77E+00	3.00E-01	2.77E-05	1.08E+04

Table A-10 Adsolubilization of Toluene with Acetophenone 0.714 mmol/l at pH5 Region III
weight of silica = 15 g
molecular weigth of toluene = 92
molecular weigth of acetophenone = 120
ρ (acetophenone) = 1.028 g/ml
ρ (toluene) = 0.867 g/ml
Equation (acetophenone) Y = 0.0106X Equation (toluene) Y= 1.00E-07X
Max adsorption = 700 micromole/g silica

[Tol] initial (µl)	[Tol] initial mol/L	Area at equilibrium	[Tol]eq (mol/L)	[Tol] ads (µmole/ g silica)	A	[Ace] eq mol/l	[Ace] ads (µmol/ g silica)	Xadmicelle	Xbulk	K
50	7.84E-04	1.37E+05	1.49E-04	2.54E+01	2.01E-02	4.43E-04	1.08E+01	3.45E-02	2.68E-06	1.29E+04
100	1.57E-03	2.99E+05	3.25E-04	4.97E+01	1.99E-02	4.39E-04	1.10E+01	6.54E-02	5.85E-06	1.12E+04
200	3.14E-03	6.33E+05	6.88E-04	9.79E+01	2.13E-02	4.69E-04	9.79E+00	1.21E-01	1.24E-05	9.78E+03
300	4.70E-03	9.64E+05	1.05E-03	1.46E+02	2.00E-02	4.42E-04	1.09E+01	1.71E-01	1.89E-05	9.04E+03
350	5.49E-03	1.21E+06	1.32E-03	1.67E+02	2.00E-02	4.41E-04	1.09E+01	1.90E-01	2.37E-05	8.00E+03

Table A-11 Adsolubilization of Acetophenone with Toluene 0.785 mmol/l at pH5 I= 10 mM Region I
Weight of silica = 15 g
Molecular weigth of toluene = 92
Molecular weigth of acetophenone = 120
ρ (acetophenone) = 1.028 g/ml
ρ (toluene) = 0.867 g/ml
Max adsorption = 24 micromole/g silica
Equation (acetophenone) Y = 0.0106X Equation (toluene) Y= 1.00E-07X

[Ace] initial (μ	Ace] initia mol/l	A	[Ace] eq mol/l	[Ace] ads (μmol/g silica)	Area at equilibrium	[Tol] eq (mol/l)	[Tol] ads μmol/g silica	Xadmicelle	Xbulk	K
100	1.43E-03	3.42E-02	1.21E-03	8.78E+00	3.59E+05	3.90E-04	1.58E+01	1.81E-01	2.18E-05	8.30E+03
500	7.14E-03	2.22E-01	6.52E-03	2.47E+01	3.56E+05	3.87E-04	1.59E+01	3.82E-01	1.17E-04	3.25E+03
1000	1.43E-02	4.44E-01	1.31E-02	4.85E+01	3.68E+05	4.00E-04	1.54E+01	5.52E-01	2.35E-04	2.34E+03
1500	2.14E-02	6.68E-01	1.97E-02	7.01E+01	3.88E+05	4.22E-04	1.45E+01	6.45E-01	3.55E-04	1.82E+03
2000	2.86E-02	8.83E-01	2.60E-02	1.02E+02	3.58E+05	3.89E-04	1.58E+01	7.19E-01	4.69E-04	1.53E+03

Table A-12 Adsolubilization of Acetophenone with Toluene 0.785 mmol/l at pH5 I= 10 mM Region II
Weight of silica = 15 g
Molecular weigth of toluene = 92
Molecular weigth of acetophenone = 120
ρ (acetophenone) = 1.028 g/ml
ρ (toluene) = 0.867 g/ml
Max adsorption =360micromole/g silica
Equation (acetophenone) Y = 0.0106X Equation (toluene) Y= 1.00E-07X

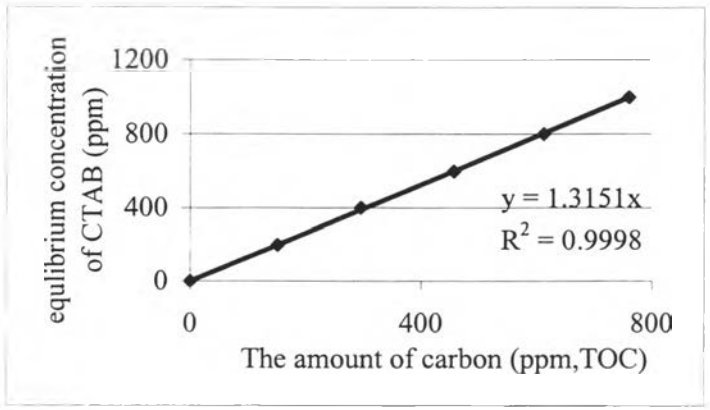
[Ace] initial (µl	[Ace] initial mol/l	A	[Ace] eq mol/l	[Ace] ads µmol/g silica	Area at equilibrium	[Tol] eq (mol/l)	[Tol] ads µmol/g silica	Xadmicelle	Xbulk	K
100	1.43E-03	2.62E-02	7.71E-04	2.63E+01	1.53E+05	1.66E-04	2.48E+01	6.39E-02	1.39E-05	4.60E+03
500	7.14E-03	1.32E-01	3.88E-03	1.30E+02	1.57E+05	1.70E-04	2.46E+01	2.53E-01	6.99E-05	3.62E+03
1000	1.43E-02	2.68E-01	7.88E-03	2.56E+02	1.49E+05	1.61E-04	2.49E+01	3.99E-01	1.42E-04	2.82E+03
1500	2.14E-02	4.34E-01	1.28E-02	3.45E+02	1.44E+05	1.57E-04	2.51E+01	4.73E-01	2.30E-04	2.05E+03
2000	2.86E-02	5.62E-01	1.66E-02	4.80E+02	1.50E+05	1.64E-04	2.49E+01	5.55E-01	2.98E-04	1.86E+03

Table A-13 Adsolubilization of Acetophenone with Toluene 0.785 mmol/l at pH5 I= 10 mM Region III
Weight of silica = 15 g
Molecular weigth of toluene = 92
Molecular weigth of acetophenone = 120
ρ (acetophenone) = 1.028 g/ml
ρ (toluene) = 0.867 g/ml
Max adsorption = 500micromole/g silica
Equation (acetophenone) Y = 0.0106X Equation (toluene) Y= 1.00E-07X

[Ace] initial (µl	[Ace] initial mol/l	A	[Ace] eq mol/l	[Ace] ads (µmol/g silica)	Area at equilibrium	[Tol] eq (mol/l)	[Tol] ads µmol/g silica	Xadmicelle	Xbulk	K
100	1.43E-03	2.60E-02	7.66E-04	2.65E+01	1.54E+05	1.68E-04	2.47E+01	2.78E-02	1.38E-05	2.02E+03
500	7.14E-03	1.37E-01	4.03E-03	1.25E+02	1.57E+05	1.70E-04	2.46E+01	1.19E-01	7.25E-05	1.64E+03
1000	1.43E-02	2.83E-01	8.32E-03	2.38E+02	1.59E+05	1.73E-04	2.45E+01	2.05E-01	1.50E-04	1.37E+03
1500	2.14E-02	3.93E-01	1.16E-02	3.94E+02	1.55E+05	1.69E-04	2.46E+01	2.99E-01	2.08E-04	1.43E+03
2000	2.86E-02	4.93E-01	1.45E-02	5.61E+02	1.55E+05	1.68E-04	2.47E+01	3.78E-01	2.62E-04	1.44E+03

Table A-14 Calibration curve of Cetyltrimethylammonium bromide by Total organic carbon (TOC)

[CTAB]ppm	[CTAB] ppm from TOC
0	0
200	151.6
400	296.1
600	456.9
800	611.9
1000	760.3



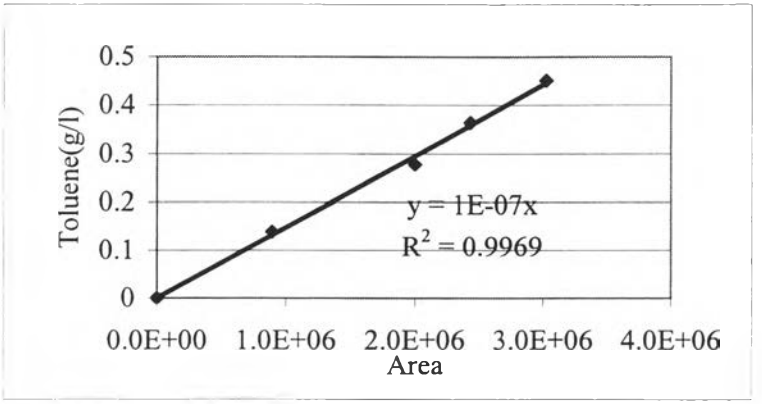
Equation Y = 1.3151 X

where Y = equlibrium concentration of CTAB (ppm)

X = the amount of carbon from TOC (ppm)

Table A-15 Calibration curve of toluene by Head-space gas chromatography

Toluene(μL)/50 m	Toluene (g/l)	Area
0	0	0
8	0.13872	895755.3
16	0.27744	2001301.66
21	0.36414	2435975.89
26	0.45084	3024457.11



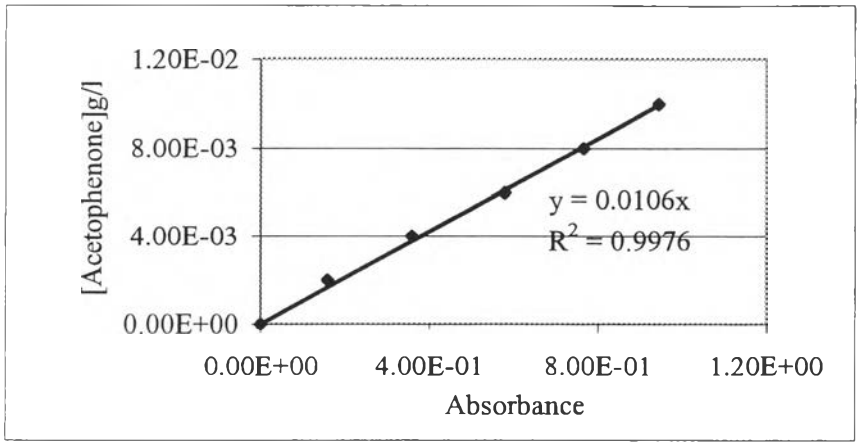
Equation Y = 1.00E-07X

where X = Area of Head space gas chromatography

Y = Equlibrium concentration of toluene (g/l)

Table A- 16 Calibration curve of acetophenone by UV-VIS spectrophotometer

[Acetophenone] (g/l	Absorbance
0.00E+00	0.00E+00
2.00E-03	1.60E-01
4.00E-03	3.59E-01
6.00E-03	5.80E-01
8.00E-03	7.65E-01
1.00E-02	9.43E-01



Equation Y=0.0106x

where X= Absorbance

Y= Equilibrium concentration of acetophenone (g/l)

Sample calculation A

Surfactant adsorption isotherms

CTAB adsorption isotherm was constructed by plotting the amount of CTAB adsorbed per gram silica versus equilibrium concentration of CTAB.

1. To convert the amount of carbon from TOC (ppm) to equlibrium concentration of CTAB (ppm)
   Equation from TOC $Y = 1.3151X$ where
   X = The amount of carbon from TOC (ppm) = 160.4 ppm replace in the equation
   Y = equlibrium concentration of CTAB (ppm) = 1.3151x160.4=210.94 ppm

2. Finding CTAB adsorbed concentration (ppm).
   [Adsorbed CTAB] = [Initial CTAB]-[Equilibrium CTAB]
   [Initial CTAB] = 8382.58 ppm.
   [Equilibrium CTAB] = 210.94 ppm.
   [Adsorbed CTAB] = 8382.58-210.94 = 8171.64 ppm.

3. To convert unit of ppm to micromolar of [Adsorbed CTAB]
   Concentration (μM) = (Concentration (ppm)x1000)/ Molecular weight
   Adsorbed CTAB (μM) = (8171.64x1000)/364.46 = 22421.23 μM

4. To convert adsorption concentration to moles of adsorption.
   Mole = (concentration x volume)/1000
   Adsorbed (μmoles) = (Adsorbed (μM) x volume of solution)/1000
   Adsorbed (μmoles) = (22421.23 × 20)/1000 = 448.43

5. Finding CTAB adsorbed per gram silica.

   CTAB adsorbed (μmoles/g silica) = Adsorbed (μmoles)/ the amount of silica (g)

   CTAB adsorbed (μmoles/g silica) = 448.43/0.5 = 896.86

6. Calculate Ionic strength

   Stock solution of sodium bromine (NaBr) = 1 M

   From

$$\frac{W}{MW} = \frac{C \times V}{1000}$$

   W = (1× 100× 102.9)/1000

   = 10.29 g/100 ml

   Ionic strength = 10mM or 0.01M

   From $C_1V_2 = C_2V_2$

   $1\times V_2 = 0.01\times 20$

   $V_2 = 0.2$ ml

   Hence, adding NaBr 0.2 ml and CTAB solution 19.8 ml in vial.

Sample calculation B

Partition coefficient

$$K = \frac{X_{admicelle}}{X_{bulk}}$$

Where $X_{admicelle}$ = mole fraction of solute in the surfactant coverage.

X_{bulk} = mole fraction of solute in the bulk.

Adsolubilization of toluene at pH 5 ionic strength 10 mM region III

Weight of silica = 15 g

Molecular weight of toluene = 92 g/mol

Equation from GC Y= 1.00E-07 X

Where X = Area of head space gas chromatography

Y = Equilibrium concentration of toluene

$\rho_{toluene}$ = 0.867 g/mL

Maximum adsorption of CTAB = 700 μmol/ g silica

Initial concentration of toluene (g/L) convert to (mol/L)

[Tol, mol/L] = ([Tol, g/L]/Molecular weight)

[Tol, mol/L] = (7.23E-02)/92 = 7.85E-04

At equilibrium toluene concentration from area of GC

From Y= 1.00E-07 X

X = Area = 1.46E+05 replace in the equation

Y = 1.00E-07×1.46E+05 = 1.46E-02 (g/L)

Convert unit of toluene concentration from (g/L) to (mol/L)

[Tol, mol/L] = 1.46E-02/92 = 1.58E-04

Toluene adsolubilization = [Toluene] initial – [Toluene] equilibrium

= 7.85E-04 – 1.58E-04

= 6.27E-04 mol/L

Toluene adsolubilization = 6.27E+02 μmol/L

Toluene adsolubilization (μmol/ g silica) = ((([Toluene] × volume)/1000)/15)

= (((6.27E+02 × 600)/1000)/15)

= 2.51E+01

$X_{admicelle}$ = (Mole of Toluene/(Mole of CTAB solution +Mole of Toluene))

$X_{admicelle}$ = (25.1/(700+25.1)) = 3.46E-02

At the supernatant

Toluene concentration at equilibrium is converted to mole

Mole of Toluene = (concentration x volume)/1000

Mole of Toluene = (1.58E-04 x 600) /1000 = 9.48E-05

Total volume = Volume of toluene + Volume of H_2O

Volume of Toluene(ml) = (mole of Toluene x MW)/density

Volume of Toluene(ml) = (9.48 E-05 x 92)/0.867 = 1.01E-02

Volume of H_2O = Total volume - Volume of toluene

= 600 ml- 1.01E-02ml

= 5.99E+02 ml

Assume density of water = 1 g/ml

Mass of H_2O = Volume of H_2O

= 5.99E+02 g

Mole of H_2O = Mass of H_2O/18 = (5.99E+02/18) = 3.33E+01

X_{bulk} = (Mole of Toluene/(Mole of H_2O +Mole of Toluene))

X_{bulk} = (9.48E-05/(3.33E+01 + 9.48E-05)) = 2.85E-06

K = ($X_{admicelle}$ / X_{bulk}) = (3.46E-02/2.85E-06) =1.21E+04

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