

Assay name: **UV-metric psKa** Analyst: **Dorothy Levorse**

17J-07008 Instrument ID: Assay ID: T311053 Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r

Yasuda-Shedlovsky result

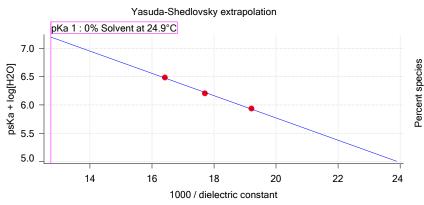
Extrapolation type pKa 0% SD Intercept Slope R^2 Ionic strength Temperature

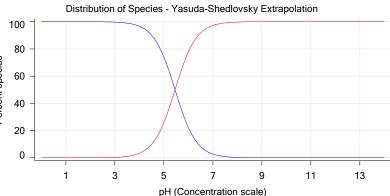
±0.06 9.70 24.9°C Yasuda-Shedlovsky 5.45 -196.5408 0.9968 0.166 M

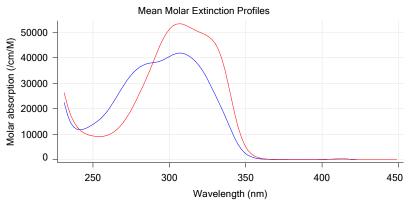
Component assay results

Titration		Direction	Result	Dielectric	[H2O]	lonic	Temperature		psKa
	weight%		type	constant		strength			1
17J-07008 Points 4 to 69	59.15 %	Up	UV-metric pKa	52.1	19.5 M	0.157 M	24.9°C	<u></u>	4.64
17J-07008 Points 71 to 142	49.79 %	Up	UV-metric pKa	56.5	24.5 M	0.167 M	24.9°C	<u></u>	4.81
17J-07008 Points 144 to 211	40.20 %	Up	UV-metric pKa	60.9	29.9 M	0.175 M	24.9°C	<u></u>	5.01

Graphs







UV-metric psKa Titration 1 of 3 17J-07008 Points 4 to 69

Results

pKa 1 4.64 RMSD 0.001 0.001 Chi squared 0.0057 PCA calculated number of pKas

Average ionic strength 0.157 M Average temperature 24.9°C

Analyte concentration range 29.5 μM to 27.7 μM

Methanol weight % 59.1 % Dielectric constant 52.1 Water concentration 19.5 M

Number of pKas source **Predicted**

Wavelength clipping 230.0 nm to 450.0 nm

Report by: Dorothy Levorse 10/11/2017 10:32:57 AM Page 1 of 15



Assay name: **UV-metric psKa** Analyst: **Dorothy Levorse**

Assay ID: 17J-07008 Instrument ID: T311053 Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r

Results (continued)

pH clipping 1.468 to 12.523

Warnings and errors

Errors None

Warnings PCA calculation disagrees with predicted number of pKas

Assay Settings

Setting Value Original Value Date/Time changed Imported from

Buffer in use Yes

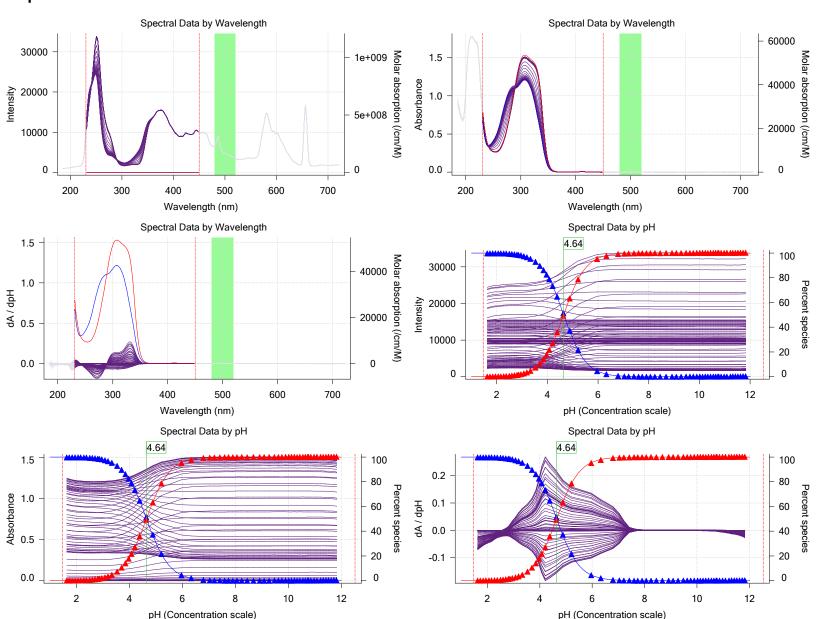
Buffer type Phosphate Buffer

Assay Medium

Volume of buffer introduced 0.025000 mL Add buffer manually

Manual

Graphs

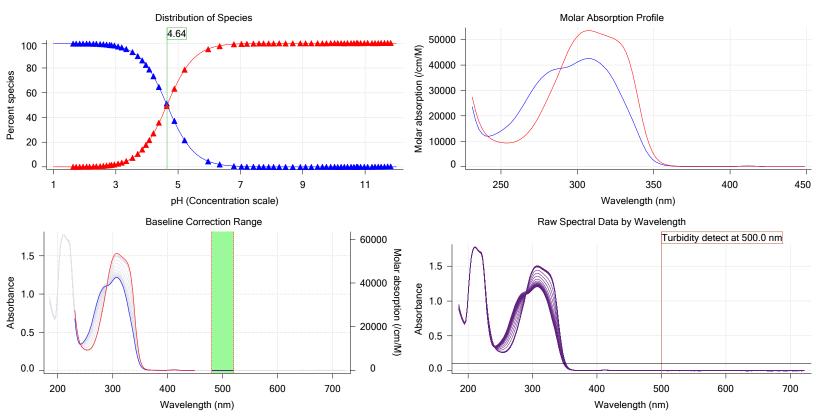




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17J-07008 Instrument ID: Assay ID: T311053 Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r

Graphs (continued)



Titration 2 of 3 17J-07008 Points 71 to 142 UV-metric psKa

Results

pKa 1 4.81 RMSD 0.002 0.002 Chi squared 0.0040

PCA calculated number of pKas

Average ionic strength 0.167 M Average temperature 24.9°C

Analyte concentration range 25.2 μM to 23.8 μM

Methanol weight % 49.8 % Dielectric constant 56.5 Water concentration 24.5 M

Number of pKas source Wavelength clipping

Predicted

230.0 nm to 450.0 nm

1.463 to 12.526

Warnings and errors

Errors

pH clipping

Warnings PCA calculation disagrees with predicted number of pKas

Assay Settings

Original Value Date/Time changed Imported from Setting Value

Buffer in use Yes Buffer type

Phosphate Buffer Assay Medium

Report by: Dorothy Levorse 10/11/2017 10:32:57 AM



UV-metric psKa Assay name: Analyst: **Dorothy Levorse**

Assay ID: 17J-07008 Instrument ID: T311053 Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r

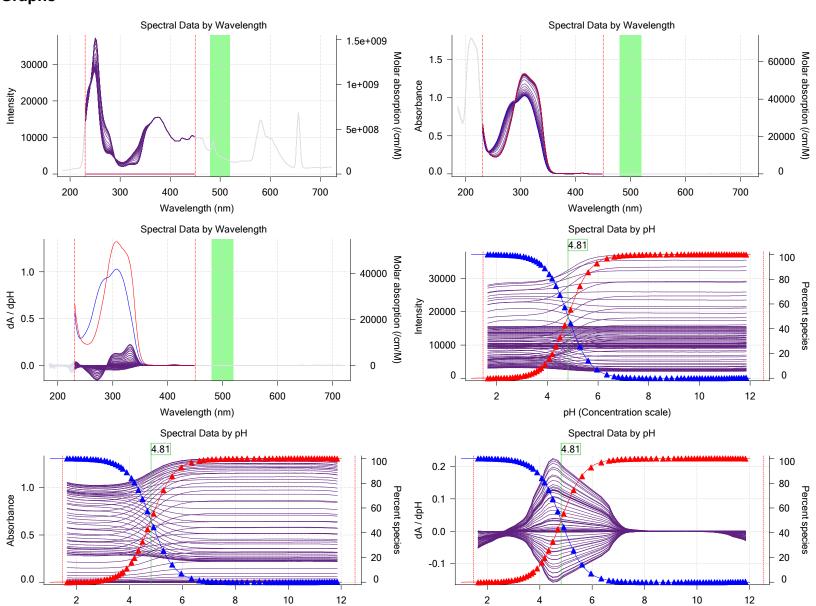
Assay Settings (continued)

Setting Value Volume of buffer introduced 0.025000 mL

Original Value Date/Time changed Imported from

Add buffer manually Manual

Graphs



pH (Concentration scale)

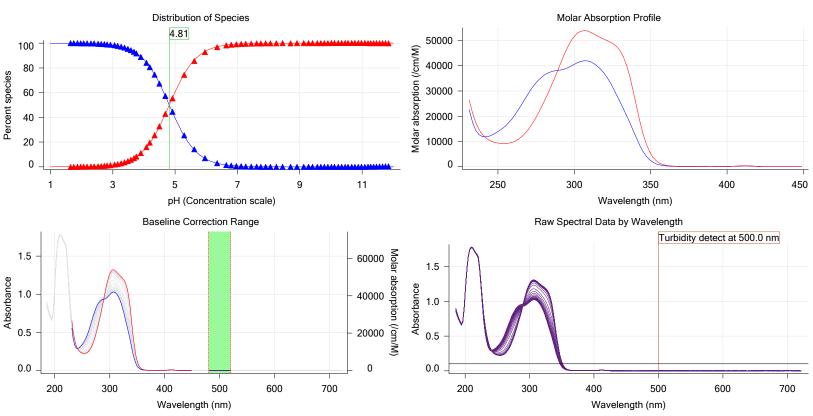
pH (Concentration scale)



Assay name: **UV-metric psKa** Analyst: **Dorothy Levorse**

17J-07008 Instrument ID: Assay ID: T311053 Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r

Graphs (continued)



UV-metric psKa Titration 3 of 3 17J-07008 Points 144 to 211

Results

pKa 1 5.01 RMSD 0.003 0.003 Chi squared 0.0086

PCA calculated number of pKas

Average ionic strength 0.175 M Average temperature 24.9°C

Analyte concentration range

20.7 μM to 19.6 μM 40.2 %

Methanol weight % Dielectric constant 60.9 Water concentration 29.9 M

Number of pKas source Wavelength clipping pH clipping

Predicted

230.0 nm to 450.0 nm

1.477 to 12.545

Warnings and errors

Errors

Warnings PCA calculation disagrees with predicted number of pKas

Assay Settings

Original Value Date/Time changed Imported from Setting Value

Buffer in use Buffer type

Yes

Phosphate Buffer

Assay Medium

Report by: Dorothy Levorse 10/11/2017 10:32:57 AM



UV-metric psKa Assay name: Analyst: **Dorothy Levorse**

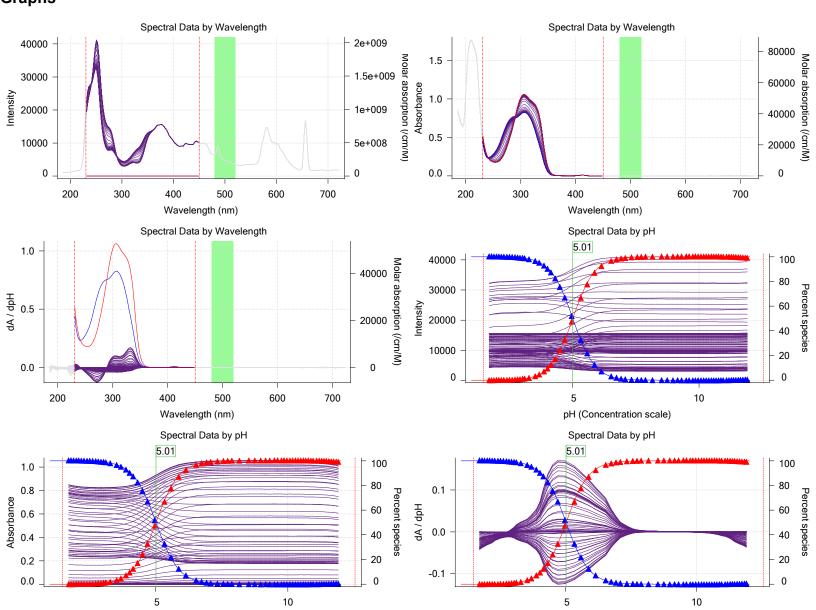
Assay ID: 17J-07008 Instrument ID: T311053 Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r

Assay Settings (continued)

Value Original Value Date/Time changed Imported from Setting Volume of buffer introduced 0.025000 mL

Add buffer manually Manual

Graphs



pH (Concentration scale)

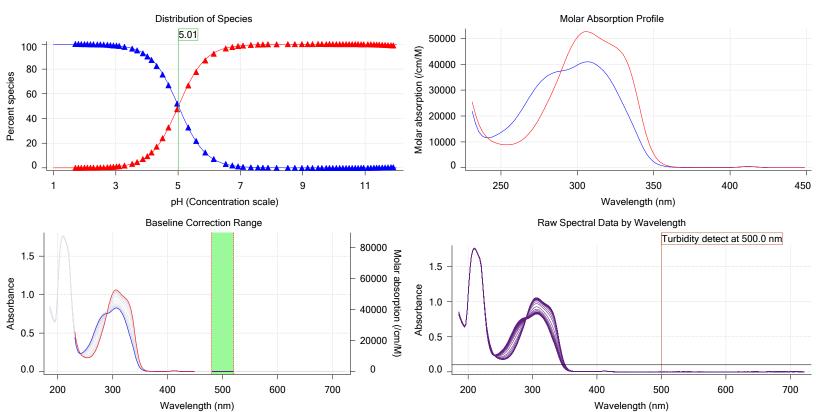
pH (Concentration scale)



Assay name: UV-metric psKa Analyst: Dorothy Levorse

Assay ID: 17J-07008 Instrument ID: T311053 Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r

Graphs (continued)



Assay Model

Settings	Value	Date/Time changed	Imported from
Sample name	D08	10/2/2017 12:57:31 PM	User entered value
Sample by	Volume		Default value
Sample volume	0.0010 mL	10/6/2017 6:10:30 PM	User entered value
Solvent	DMSO		Default value
Sample concentration	0.047100 M	10/2/2017 12:59:19 PM	User entered value
Solubility	Unknown		Default value
Molecular weight	420.46	9/29/2017 6:40:43 PM	User entered value
Individual pKa ionic environments	No		Default value
Number of pKas	1	9/29/2017 6:40:34 PM	User entered value
Sample is a	Base	9/29/2017 6:40:34 PM	User entered value
pKa 1	6.16	9/29/2017 6:40:34 PM	User entered value
logp (XH +)	-10.00		Default value
logP (neutral X)	-10.00	9/29/2017 6:40:34 PM	User entered value

Events

10:41.0 Data point 9

Event	Water	Acid	Base	Methanol	Buffer	рН	dpH/dt	pH R-square
Dark spectrum								•
Reference spectrum								
Volume reset due to vial change								
Initial pH = 8.03								
Data point 4	0.15005 mL	0.07331 mL	0.00000 mL	1.34995 mL	0.02500 mL	1.968	-0.04384	0.97174
Data point 5	0.15005 mL	0.07331 mL	0.01545 mL	1.34995 mL	0.02500 mL	2.071	-0.00569	0.17964
Data point 6	0.15005 mL	0.07331 mL	0.02773 mL	1.34995 mL	0.02500 mL	2.180	0.00971	0.79084
Data point 7	0.15005 mL	0.07331 mL	0.03723 mL	1.34995 mL	0.02500 mL	2.288	0.01064	0.86455
Data point 8	0.15005 mL	0.07331 mL	0.04466 mL	1.34995 mL	0.02500 mL	2.401	0.00798	0.72819
	Dark spectrum Reference spectrum Volume reset due to vial change Initial pH = 8.03 Data point 4 Data point 5 Data point 6 Data point 7	Dark spectrum Reference spectrum Volume reset due to vial change Initial pH = 8.03 Data point 4 Data point 5 Data point 6 Data point 7 0.15005 mL 0.15005 mL 0.15005 mL	Dark spectrum Reference spectrum Volume reset due to vial change Initial pH = 8.03 Data point 4 Data point 5 Data point 6 Data point 7 0.15005 mL 0.07331 mL 0.15005 mL 0.07331 mL 0.15005 mL 0.07331 mL 0.15005 mL 0.07331 mL	Dark spectrum Reference spectrum Volume reset due to vial change Initial pH = 8.03 Data point 4 Data point 5 Data point 6 Data point 7 Data point 7	Dark spectrum Reference spectrum Volume reset due to vial change Initial pH = 8.03 Data point 4 Data point 5 Data point 6 Data point 7 Data point 7 0.15005 mL 0.07331 mL 0.00000 mL 1.34995 mL 0.07331 mL 0.01545 mL 1.34995 mL 0.15005 mL 0.07331 mL 0.02773 mL 1.34995 mL 0.15005 mL 0.07331 mL 0.03723 mL 1.34995 mL	Dark spectrum Reference spectrum Volume reset due to vial change Initial pH = 8.03 Data point 4	Dark spectrum Reference spectrum Volume reset due to vial change Initial pH = 8.03 Data point 4 Data point 5 Data point 6 Data point 7 O.07331 mL O.00000 mL 1.34995 mL O.02500 mL 1.968 0.15005 mL O.07331 mL O.07331 mL O.02773 mL O.02500 mL	Dark spectrum Reference spectrum Volume reset due to vial change Initial pH = 8.03 Data point 4

0.15005 mL 0.07331 mL 0.05045 mL 1.34995 mL 0.02500 mL 2.499 0.00925

Analyst:

Experiment start time: 10/7/2017 12:30:45 PM

Dorothy Levorse

T311053



Sample name: **D08**

Assay name: UV-metric psKa

Assay ID: 17J-07008

Instrument ID: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r

Filename:

Events	s (continued)								
Time	Event	Water	Acid	Base	Methanol	Buffer	рН	dpH/dt	pH R-squared	pH SD
10:57.8	Data point 10	0.15005 mL	0.07331 mL	0.05508 mL	1.34995 mL	0.02500 mL	2.616	0.01286	0.90473	0.00067
11:24.8	Data point 11	0.15005 mL	0.07331 mL	0.05875 mL	1.34995 mL	0.02500 mL	2.714	0.00948	0.76175	0.00054
11:41.5	Data point 12	0.15005 mL	0.07331 mL	0.06157 mL	1.34995 mL	0.02500 mL	2.836	0.00838	0.83587	0.00045
12:08.5	Data point 13	0.15005 mL	0.07331 mL	0.06350 mL	1.34995 mL	0.02500 mL	2.933	0.00085	0.03139	0.00024
12:25.1	Data point 14	0.15005 mL	0.07331 mL	0.06522 mL	1.34995 mL	0.02500 mL	3.035	0.00299	0.19328	0.00034
12:41.7	Data point 15	0.15005 mL	0.07331 mL	0.06658 mL	1.34995 mL	0.02500 mL	3.134	0.00556	0.56405	0.00037
12:58.3	Data point 16	0.15005 mL	0.07331 mL	0.06766 mL	1.34995 mL	0.02500 mL	3.193	0.01007	0.85873	0.00054
13:25.3	Data point 17	0.15005 mL	0.07331 mL	0.06867 mL	1.34995 mL	0.02500 mL	3.285	0.00942	0.86087	0.00050
13:41.9	Data point 18	0.15005 mL	0.07331 mL	0.06943 mL	1.34995 mL	0.02500 mL	3.402	0.01064	0.80976	0.00058
14:03.6	Data point 19	0.15005 mL	0.07331 mL	0.07001 mL	1.34995 mL	0.02500 mL	3.516	0.02132	0.96984	0.00107
14:20.1	Data point 20	0.15005 mL	0.07331 mL	0.07046 mL	1.34995 mL	0.02500 mL	3.658	0.02802	0.98020	0.00140
14:41.9	Data point 21	0.15005 mL	0.07331 mL	0.07098 mL	1.34995 mL	0.02500 mL	3.856	0.04042	0.98885	0.00201
15:03.5	Data point 22	0.15005 mL	0.07331 mL	0.07133 mL	1.34995 mL	0.02500 mL	4.026	0.06251	0.99491	0.00309
15:25.3	Data point 23	0.15005 mL	0.07331 mL	0.07157 mL	1.34995 mL	0.02500 mL	4.166	0.07947	0.99285	0.00394
15:46.8	Data point 24	0.15005 mL	0.07331 mL	0.07173 mL	1.34995 mL	0.02500 mL	4.284	0.09990	0.99028	0.00496
16:11.6	Data point 25	0.15005 mL	0.07331 mL	0.07185 mL	1.34995 mL	0.02500 mL	4.391	0.09735	0.98849	0.00483
16:39.3	Data point 26	0.15005 mL	0.07331 mL	0.07194 mL	1.34995 mL	0.02500 mL	4.520	0.10069	0.99307	0.00499
17:17.2	Data point 27	0.15005 mL	0.07331 mL	0.07204 mL	1.34995 mL	0.02500 mL	4.694	0.09903	0.99552	0.00490
18:03.5	Data point 28	0.15005 mL	0.07331 mL	0.07213 mL	1.34995 mL	0.02500 mL	4.940	0.09004	0.88669	0.00472
18:59.2	Data point 29	0.15005 mL	0.07331 mL	0.07220 mL	1.34995 mL	0.02500 mL	5.183	0.09773	0.98421	0.00486
20:02.4	Data point 30	0.15005 mL	0.07331 mL	0.07227 mL	1.34995 mL	0.02500 mL	5.509	0.14412	0.99800	0.00712
21:19.1	Data point 31	0.15005 mL	0.07331 mL	0.07234 mL	1.34995 mL	0.02500 mL	6.252	0.18732	0.99659	0.00926
22:30.7	Data point 32	0.15005 mL	0.07331 mL	0.07239 mL	1.34995 mL	0.02500 mL	6.613	0.07325	0.58421	0.00473
23:41.4	Data point 33	0.15005 mL	0.07331 mL	0.07248 mL	1.34995 mL	0.02500 mL	7.067	0.10012	0.99249	0.00496
24:45.2	Data point 34	0.15005 mL	0.07331 mL	0.07255 mL	1.34995 mL	0.02500 mL	7.305	0.10049	0.99172	0.00498
25:40.1	Data point 35	0.15005 mL	0.07331 mL	0.07262 mL	1.34995 mL	0.02500 mL	7.476	0.09956	0.99376	0.00493
26:31.9	Data point 36	0.15005 mL	0.07331 mL	0.07272 mL	1.34995 mL	0.02500 mL	7.681	0.09843	0.99531	0.00487
27:20.8	Data point 37	0.15005 mL	0.07331 mL	0.07281 mL	1.34995 mL	0.02500 mL	7.861	0.10092	0.99292	0.00500
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Assay name: **UV-metric psKa** Analyst: **Dorothy Levorse**

17J-07008 Instrument ID: Assay ID: T311053

Assay ID: 17J-07008 Instrument ID: T311053 Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r										
Events	(continued)									
Time	Event	Water	Acid	Base	Methanol	Buffer	рН	dpH/dt	pH R-squared	pl Si
42:33.9	Data point 67					0.02500 mL		-0.00428	0.49302	0.
42:50.6	Data point 68					0.02500 mL		-0.00582	0.66314	0.
43:07.3	Data point 69	0.15005 mL	0.07331 mL	0.09904 mL	1.34995 mL	0.02500 mL	12.023	-0.00195	0.17577	0.
44:42.4	Reference spectrum									
45:45.1	Data point 71					0.02500 mL		-0.04858	0.92277	0.
46:12.4	Data point 72					0.02500 mL		0.00539	0.35675	0.
46:29.4	Data point 73					0.02500 mL		0.00805	0.46264	0.
46:56.6	Data point 74					0.02500 mL		0.02048	0.56559	0.
47:18.6	Data point 75					0.02500 mL		0.02354	0.95170	0.
47:45.7	Data point 76	0.22001 mL	0.17331 mL	0.14915 mL	1.34995 mL	0.02500 mL	2.484	0.01338	0.88956	0.
48:02.5	Data point 77					0.02500 mL		0.01721	0.93345	0.
48:29.5	Data point 78					0.02500 mL		0.00917	0.85110	0.
48:46.2	Data point 79					0.02500 mL		0.01568	0.91796	0.
49:13.1	Data point 80	0.22001 mL	0.17331 mL	0.16340 mL	1.34995 mL	0.02500 mL	2.935	0.01372	0.90142	0.
49:29.7	Data point 81	0.22001 mL	0.17331 mL	0.16524 mL	1.34995 mL	0.02500 mL	3.034	0.00221	0.18916	0.
49:46.3	Data point 82	0.22001 mL	0.17331 mL	0.16672 mL	1.34995 mL	0.02500 mL	3.120	0.00983	0.79296	0.
50:02.9	Data point 83	0.22001 mL	0.17331 mL	0.16792 mL	1.34995 mL	0.02500 mL	3.229	0.01122	0.87851	0.
50:19.5	Data point 84	0.22001 mL	0.17331 mL	0.16886 mL	1.34995 mL	0.02500 mL	3.358	0.01253	0.93394	0.
50:46.5	Data point 85	0.22001 mL	0.17331 mL	0.16950 mL	1.34995 mL	0.02500 mL	3.453	0.01761	0.95688	0.
51:03.0	Data point 86	0.22001 mL	0.17331 mL	0.17004 mL	1.34995 mL	0.02500 mL	3.565	0.01962	0.95692	0.
51:19.6	Data point 87	0.22001 mL	0.17331 mL	0.17046 mL	1.34995 mL	0.02500 mL	3.672	0.02712	0.97628	0.
51:36.0	Data point 88	0.22001 mL	0.17331 mL	0.17079 mL	1.34995 mL	0.02500 mL	3.777	0.03251	0.96671	0.
51:52.6	Data point 89	0.22001 mL	0.17331 mL	0.17105 mL	1.34995 mL	0.02500 mL	3.875	0.03668	0.98245	0.
52:09.2	Data point 90					0.02500 mL		0.04093	0.97316	0.
52:25.8	Data point 91	0.22001 mL	0.17331 mL	0.17142 mL	1.34995 mL	0.02500 mL	4.045	0.04723	0.98797	0.
52:47.6	Data point 92	0.22001 mL	0.17331 mL	0.17164 mL	1.34995 mL	0.02500 mL	4.186	0.07494	0.99220	0.
53:09.3	Data point 93	0.22001 mL	0.17331 mL	0.17183 mL	1.34995 mL	0.02500 mL	4.364	0.10097	0.99430	0.
53:31.9	Data point 94					0.02500 mL		0.09850	0.99243	0.
54:02.0	Data point 95					0.02500 mL		0.10108	0.99650	0.
54:39.7	Data point 96					0.02500 mL		0.09962	0.98985	0.
55:22.1	Data point 97					0.02500 mL		0.10012	0.97767	0.
56:13.4	Data point 98					0.02500 mL		0.09577	0.98450	0.
57:11.2	Data point 99					0.02500 mL		0.09982	0.99195	0.
58:18.3	Data point 100					0.02500 mL		0.09752	0.99132	0.
59:29.1	Data point 101					0.02500 mL		0.09862	0.99637	0.
1:00:41.3						0.02500 mL		0.10103	0.99470	0.
1:01:43.6	•					0.02500 mL		0.10018	0.99236	0.
1:02:38.8						0.02500 mL		0.09709	0.98546	0.
1:03:20.9						0.02500 mL		0.09976	0.99383	0.
1:04:01.2						0.02500 mL		0.09888	0.99221	0.
1:04:42.9						0.02500 mL		0.09989	0.99145	0.
1:05:28.1	Data point 108					0.02500 mL		0.09737	0.99313	0.
1:06:07.9						0.02500 mL		0.09751	0.98830	0.
1:06:45.7	•					0.02500 mL		0.09914	0.99100	0.
	Data point 111					0.02500 mL		0.09745	0.96937	0.
	Data point 112					0.02500 mL		0.09867	0.98752	0.
	Data point 113					0.02500 mL		0.09862	0.98927	0.
	Data point 114		0.17221 ml					0.10062		0

0.22001 mL 0.17331 mL 0.17342 mL 1.34995 mL 0.02500 mL 8.680

0.22001 mL 0.17331 mL 0.17364 mL 1.34995 mL 0.02500 mL 9.349

0.22001 mL 0.17331 mL 0.17371 mL 1.34995 mL 0.02500 mL 9.496

0.22001 mL 0.17331 mL 0.17387 mL 1.34995 mL 0.02500 mL 9.779

0.22001 mL 0.17331 mL 0.17397 mL 1.34995 mL 0.02500 mL 9.891

0.22001 mL 0.17331 mL 0.17406 mL 1.34995 mL 0.02500 mL 10.002 0.09832

0.22001 mL 0.17331 mL 0.17418 mL 1.34995 mL 0.02500 mL 10.111 0.07626

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1:09:25.8 Data point 114

1:10:11.6 Data point 115

1:10:58.4 Data point 116

1:11:40.8 Data point 117

1:12:21.1 Data point 118

1:12:55.7 Data point 119

1:13:28.4 Data point 120

1:13:54.5 Data point 121

1:14:22.0 Data point 122

1:14:48.6 Data point 123

0.10063

0.09978

0.10000

0.09478

0.09924

0.10027

0.09867

0.10059

0.99049

0.98381

0.98307

0.97546

0.98988

0.98245

0.98336

0.98974

0.96383

0.98232

0.

0.

0.

0.

0.

0.

0.

0.



Experiment start time: 10/7/2017 12:30:45 PM Sample name: **D08**

Assay name: **Dorothy Levorse UV-metric psKa** Analyst:

Assay ID: 17J-07008 Instrument ID: T311053

Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r										
Events	(continued)									
Time	Event	Water	Acid	Base	Methanol	Buffer	рН	dpH/dt	pH R-squared	pl Si
1:15:10.1	Data point 124	0.22001 mL	0.17331 mL	0.17432 mL	1.34995 mL	0.02500 mL	10.221	0.05511	0.97660	0.
1:15:36.9	Data point 125	0.22001 mL	0.17331 mL	0.17448 mL	1.34995 mL	0.02500 mL	10.320	0.04439	0.96712	0.
1:15:58.6	Data point 126	0.22001 mL	0.17331 mL	0.17469 mL	1.34995 mL	0.02500 mL	10.440	0.02578	0.94578	0.
1:16:20.2	Data point 127		0.17331 mL						0.93104	0.
1:16:42.1	Data point 128	0.22001 mL	0.17331 mL	0.17528 mL	1.34995 mL	0.02500 mL	10.657	0.01355	0.92117	0.
1:17:08.9	Data point 129	0.22001 mL	0.17331 mL	0.17568 mL	1.34995 mL	0.02500 mL	10.749	0.00874	0.87357	0.
1:17:30.6	Data point 130	0.22001 mL	0.17331 mL	0.17625 mL	1.34995 mL	0.02500 mL	10.868	0.00182	0.16369	0.
1:17:52.4	Data point 131	0.22001 mL	0.17331 mL	0.17686 mL	1.34995 mL	0.02500 mL	10.967	0.00138	0.13374	0.
	Data point 132	0.22001 mL	0.17331 mL	0.17756 mL	1.34995 mL	0.02500 mL	11.072	-0.00357	0.48066	0.
1:18:25.7	Data point 133	0.22001 mL	0.17331 mL	0.17846 mL	1.34995 mL	0.02500 mL	11.177	-0.00354	0.56868	0.
1:18:42.4	Data point 134	0.22001 mL	0.17331 mL	0.17961 mL	1.34995 mL	0.02500 mL	11.282	-0.00181	0.20866	0.
	Data point 135		0.17331 mL					-0.00299		0.
1:19:15.6			0.17331 mL					-0.00400		0.
1:19:32.2	Data point 137	0.22001 mL	0.17331 mL	0.18516 mL	1.34995 mL	0.02500 mL	11.558	-0.00242	0.23718	0.
1:19:48.8	Data point 138	0.22001 mL	0.17331 mL	0.18791 mL	1.34995 mL	0.02500 mL	11.652	-0.00300	0.23074	0.
1:20:05.5	Data point 139	0.22001 mL	0.17331 mL	0.19137 mL	1.34995 mL	0.02500 mL	11.748	-0.00235	0.25129	0.
1:20:22.2			0.17331 mL					-0.00581	0.71745	0.
	Data point 141		0.17331 mL					-0.00791	0.80166	0.
	Data point 142		0.17331 mL					-0.00189	0.10747	0.
1:22:37.7										
1:23:57.9	Data point 144	0.39005 mL	0.29744 mL	0.20783 mL	1.34995 mL	0.02500 mL	1.977	-0.06981	0.94029	0.
1:24:20.1	Data point 145		0.29744 mL					0.00795	0.81074	0.
1:24:42.2			0.29744 mL					-0.00095		0.
1:25:09.4	Data point 147		0.29744 mL					0.00917	0.64449	0.
1:25:31.4			0.29744 mL					0.01358	0.91979	0.
1:25:53.4	Data point 149		0.29744 mL					0.01106	0.87642	0.
1:26:20.4	Data point 150		0.29744 mL					0.01580	0.91264	0.
1:26:37.1	Data point 151		0.29744 mL					0.00615	0.61367	0.
1:27:04.1	Data point 152		0.29744 mL					0.01093	0.77080	0.
1:27:20.7			0.29744 mL					0.00845	0.74527	0.
	Data point 154		0.29744 mL					0.00366	0.40073	0.
1:28:04.3			0.29744 mL					0.00494	0.50342	0.
1:28:31.1	Data point 156		0.29744 mL					0.00940	0.79795	Ō.
	Data point 157		0.29744 mL					0.00604	0.63168	0.
	Data point 158		0.29744 mL					0.01007		Õ.
	Data point 159		0.29744 mL					-0.00152		0.
	Data point 160		0.29744 mL					0.00997	0.74172	Ō.
	Data point 161		0.29744 mL					0.01461	0.81103	Ō.
1:30:46.9	•		0.29744 mL					0.04120	0.96745	0.
	Data point 163		0.29744 mL					0.06548	0.97763	Ō.
	Data point 164		0.29744 mL					0.08087	0.98063	0.
1:31:51.9			0.29744 mL					0.09725	0.97763	Õ.
	Data point 166		0.29744 mL					0.09745	0.98744	0.
1:32:49.1			0.29744 mL					0.09973	0.98884	Ö.
	Data point 168		0.29744 mL					0.09817	0.98669	0.
	Data point 169		0.29744 mL					0.09906	0.96844	0.
	Data point 170		0.29744 mL					0.09844	0.98937	0.
	Data point 171		0.29744 mL					0.09916	0.99165	0.
	Data point 171		0.29744 mL					0.09941	0.98339	0.
	Data point 172		0.20744 mL					0.00041	0.00000	٥.

 $0.39005 \; \text{mL} \; \; 0.29744 \; \text{mL} \; \; 0.28711 \; \text{mL} \; \; 1.34995 \; \text{mL} \; \; 0.02500 \; \text{mL} \; \; 6.740$

0.39005 mL 0.29744 mL 0.28716 mL 1.34995 mL 0.02500 mL 6.946

0.39005 mL 0.29744 mL 0.28721 mL 1.34995 mL 0.02500 mL 7.129

0.39005 mL 0.29744 mL 0.28725 mL 1.34995 mL 0.02500 mL 7.289

0.39005 mL 0.29744 mL 0.28739 mL 1.34995 mL 0.02500 mL 7.759

0.39005 mL 0.29744 mL 0.28744 mL 1.34995 mL 0.02500 mL 7.919

0.39005 mL 0.29744 mL 0.28749 mL 1.34995 mL 0.02500 mL 8.078

1:37:37.6 Data point 173

1:38:14.9 Data point 174

1:38:47.6 Data point 175

1:39:20.2 Data point 176

1:39:57.5 Data point 177

1:40:36.4 Data point 178

1:41:08.0 Data point 179

1:41:40.0 Data point 180

0.

0.

0.

0.

0.

0.

0.09890

0.09352

0.09862

0.09491

0.09960

0.09611

0.09317

0.09673 0.96899

0.97644

0.95173

0.97685

0.96581

0.98267

0.94766



UV-metric psKa Assay name: Analyst: **Dorothy Levorse**

17J-07008 Assay ID: Instrument ID: T311053

Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r

Events (continued)

Time	Event	Water	Acid	Base	Methanol	Buffer	рН	dpH/dt	pH R-squared	pH SD
1:42:17.7	Data point 181	0.39005 mL	0.29744 mL	0.28756 mL	1.34995 mL	0.02500 mL		0.09741	0.97011	0.0048
1:42:58.0	Data point 182	0.39005 mL	0.29744 mL	0.28763 mL	1.34995 mL	0.02500 mL	8.707	0.09914	0.97165	0.0049
1:43:36.3	Data point 183	0.39005 mL	0.29744 mL	0.28768 mL	1.34995 mL			0.09927	0.97636	0.0049
1:44:11.6	Data point 184	0.39005 mL	0.29744 mL	0.28772 mL	1.34995 mL	0.02500 mL		0.09973	0.96892	0.0050
1:44:47.0	Data point 185	0.39005 mL	0.29744 mL	0.28777 mL	1.34995 mL	0.02500 mL	9.335	0.09604	0.95852	0.0048
1:45:18.1	Data point 186	0.39005 mL	0.29744 mL	0.28782 mL	1.34995 mL	0.02500 mL	9.492	0.09738	0.97167	0.0048
1:45:52.3	Data point 187	0.39005 mL	0.29744 mL	0.28789 mL	1.34995 mL	0.02500 mL	9.669	0.09897	0.95758	0.0049
1:46:19.4	Data point 188	0.39005 mL	0.29744 mL	0.28796 mL	1.34995 mL	0.02500 mL	9.787	0.09290	0.93810	0.0047
1:46:42.1	Data point 189		0.29744 mL		1.34995 mL	0.02500 mL	9.928	0.08998	0.98097	0.0044
1:47:03.9	Data point 190	0.39005 mL	0.29744 mL	0.28815 mL	1.34995 mL	0.02500 mL	10.029	0.06065	0.95194	0.0030
1:47:20.4	Data point 191	0.39005 mL	0.29744 mL	0.28826 mL	1.34995 mL	0.02500 mL	10.136	0.03958	0.93883	0.0020
1:47:36.9	Data point 192	0.39005 mL	0.29744 mL	0.28841 mL	1.34995 mL	0.02500 mL	10.245	0.02909	0.93027	0.0014
1:47:53.4	Data point 193	0.39005 mL	0.29744 mL	0.28859 mL	1.34995 mL	0.02500 mL	10.351	0.01660	0.91925	0.0008
1:48:10.0	Data point 194	0.39005 mL	0.29744 mL	0.28883 mL	1.34995 mL	0.02500 mL	10.451	0.01348	0.92579	0.0006
1:48:26.6	Data point 195	0.39005 mL	0.29744 mL	0.28913 mL	1.34995 mL	0.02500 mL	10.553	0.00437	0.64112	0.0002
1:48:43.3	Data point 196	0.39005 mL	0.29744 mL	0.28951 mL	1.34995 mL	0.02500 mL	10.651	0.00110	0.04060	0.0002
1:48:59.8	Data point 197	0.39005 mL	0.29744 mL	0.28998 mL	1.34995 mL	0.02500 mL	10.748	-0.00185	0.10871	0.0002
1:49:16.4	Data point 198	0.39005 mL	0.29744 mL	0.29057 mL	1.34995 mL	0.02500 mL	10.842	-0.00406	0.39231	0.0003
1:49:33.1	Data point 199	0.39005 mL	0.29744 mL	0.29130 mL	1.34995 mL	0.02500 mL	10.935	-0.00701	0.76110	0.0004
1:49:49.7	Data point 200	0.39005 mL	0.29744 mL	0.29219 mL	1.34995 mL	0.02500 mL	11.029	-0.00651	0.57533	0.0004
1:50:06.3	Data point 201	0.39005 mL	0.29744 mL	0.29330 mL	1.34995 mL	0.02500 mL	11.113	-0.00996	0.83015	0.0005
1:50:28.1	Data point 202	0.39005 mL	0.29744 mL	0.29567 mL	1.34995 mL	0.02500 mL	11.246	-0.00908	0.86719	0.0004
1:50:49.9	Data point 203	0.39005 mL	0.29744 mL	0.29704 mL	1.34995 mL	0.02500 mL	11.338	-0.00730	0.73018	0.0004
1:51:16.8	Data point 204	0.39005 mL	0.29744 mL	0.29922 mL	1.34995 mL	0.02500 mL	11.433	-0.00814	0.69283	0.0004
1:51:33.4	Data point 205	0.39005 mL	0.29744 mL	0.30207 mL	1.34995 mL	0.02500 mL	11.520	-0.01019	0.87198	0.0005
1:51:50.1	Data point 206	0.39005 mL	0.29744 mL	0.30555 mL	1.34995 mL	0.02500 mL	11.604	-0.00959	0.89477	0.0005
1:52:17.2	Data point 207	0.39005 mL	0.29744 mL	0.30945 mL	1.34995 mL	0.02500 mL	11.699	-0.00717	0.74050	0.0004
1:52:33.9	Data point 208	0.39005 mL	0.29744 mL	0.31475 mL	1.34995 mL	0.02500 mL	11.786	-0.01036	0.87388	0.0005
1:52:50.7	Data point 209	0.39005 mL	0.29744 mL	0.32128 mL	1.34995 mL	0.02500 mL	11.877	-0.00754	0.69783	0.0004
1:53:07.6	Data point 210	0.39005 mL	0.29744 mL	0.32942 mL	1.34995 mL	0.02500 mL	11.973	-0.00797	0.74702	0.0004
4 = 0 0 4 4				0.00=44	4 0 400 = 1		4004=		0 = 4004	

Assay Settings

Setting	value	Originai value	Date/Time changed	imported from

1:55:23.5 Assay volumes 0.64005 mL 0.42665 mL 0.33714 mL 1.34995 mL 0.02500 mL

1:53:24.4 Data point 211 0.39005 mL 0.29744 mL 0.33714 mL 1.34995 mL 0.02500 mL 12.045 -0.00727 0.71021

General Settings

Dorothy Levorse Analyst name

Separate reference vial

Standard Experiment Settings

Number of titrations

Minimum pH 2.000 Maximum pH 12.000 pH step between points of 0.100

Minimum titrant addition 0.00002 mL Maximum titrant addition 0.10000 mL Argon flow rate 100%

Cautious pH adjust

Yes

Advanced General Settings

Detect turbidity using Spectrometer Monitor at a wavelength of 500.0 nm Absorbance threshold of 0.100 Collect turbidity sensor data No Stir after titrant addition for 5 seconds For titrant addition, stir at 15%

Titrant Pre-Dose Titrant pre-dose

Start titration using

None Assay Medium

Report by: Dorothy Levorse 10/11/2017 10:32:57 AM



Assay name: UV-metric psKa Analyst: Dorothy Levorse

Assay ID: 17J-07008 Instrument ID: T311053 Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r

Assay Settings (continued)

Setting	Value	Original Value	Date/Time changed	Imported from

Cosolvent in use Yes
Cosolvent type Methanol
Cosolvent volume 1.35 mL
Cosolvent added Automatic
ISA water volume 0.15 mL
Water added Automatic

Buffer in use Yes

Buffer type Phosphate Buffer
Volume of buffer introduced 0.025000 mL
Add buffer manually Manual
After medium addition, stir for 5 seconds

Sample Sonication

Sonicate Yes Adjust pH for sonication No

Sonicate for 120 seconds
After sonication stir for 60 seconds

Sample Dissolution

Perform a dissolution stage No

Carbonate purge

Perform a carbonate purge No

Temperature Control

Stir speed of 15%

Titration 1

Titrate from Low to high pH

Adjust to start pH Yes

After pH adjust stir for 10 seconds

Titration 2

Titrate from Low to high pH

Additional cosolvent volume 0.00 mL
Add additional water 0.07 mL
Additional water added Automatic
After pH adjust stir for 10 seconds

Titration 3

Titrate from Low to high pH

Additional cosolvent volume 0.00 mL
Add additional water 0.17 mL
Additional water added Automatic
After pH adjust stir for 10 seconds

Data Point Stability

Stir during data point collection Yes

For point collection, stir at 15%
Delay before data point collection 0 seconds
Number of points to average 20 points
Time interval between points 0.50 seconds
Required maximum standard deviation Stability timeout after 15%

15%
0 seconds
0 oseconds

Experiment cleanup

Adjust pH to cleanup

And then stir for

For cleaning, stir at

Then add water volume

And then stir for

And then stir for

30 seconds



Assay name: UV-metric psKa Analyst: Dorothy Levorse

Assay ID: 17J-07008 Instrument ID: T311053
Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r

Calibration Settings

Setting Four-Plus alpha Four-Plus S Four-Plus jH Four-Plus jOH Base concentration factor Acid concentration factor	Value 0.161 0.9927 0.5 -0.7 1.011 1.003	10/7/2017 12:30:45 PM C 10/7/2017 12:30:45 PM C 10/7/2017 12:30:45 PM C 10/7/2017 12:30:45 PM C 10/7/2017 12:30:45 PM C	mported from ::\Sirius_T3\17J-06018_Blank standardisation.t3r ::\Sirius_T3\17J-06018_Blank standardisation.t3r ::\Sirius_T3\17J-06018_Blank standardisation.t3r ::\Sirius_T3\17J-06018_Blank standardisation.t3r ::\Sirius_T3\KOH17I22.t3r ::\Sirius_T3\17J-06018_Blank standardisation.t3r					
Instrument Settings								
Setting Instrument owner Instrument ID Instrument type Software version		Value Merck T311053 T3 Simulator 1.1.3.0		Batch Id	Install date			
Dispenser module Dispenser 0 Syringe volume Firmware version		Water 2.5 mL 1.2.1(r2)		T3DM1100253	3/31/2009 6:24:52 AM 3/31/2009 6:25:05 AM			
Titrant Dispenser 2 Syringe volume Firmware version		Water (0.15 M KCI) Acid 0.5 mL 1.2.1(r2)		8-18-17	9/26/2017 9:05:04 AM 3/31/2009 6:25:11 AM			
Titrant Dispenser 1 Syringe volume Firmware version		Acid (0.5 M HCI) Base 0.5 mL 1.2.1(r2)		166940 and 172875	10/6/2017 2:55:40 PM 3/31/2009 6:25:21 AM			
Titrant Dispenser 5 Syringe volume Firmware version		Base (0.5 M KOH) Cosolvent 2.5 mL 1.2.1(r2)		9-22-17	9/22/2017 4:02:42 PM 3/31/2009 6:26:24 AM			
Distribution valve 5 Firmware version		Distribution Valve 1.1.3			3/31/2009 6:28:19 AM			
Port A Port B		Methanol (80%, 0.15 M K) Cyclohexane	,		10/5/2017 5:02:03 PM 9/19/2017 2:15:02 PM			
Port C Dispenser 3 Syringe volume Firmware version		MeCN (50%, 0.15 M KCI) Buffer 0.5 mL 1.2.1(r2)		10-2-17	10/2/2017 11:28:55 AM 8/3/2010 6:05:16 AM			
Titrant Dispenser 6 Syringe volume Firmware version		Phosphate Buffer Octanol 0.5 mL 1.2.1(r2)			9/12/2017 12:32:29 PM 10/22/2010 11:52:43 AM			
Titrant Titrator Horizontal axis firmware Vertical axis firmware ve	rsion	1.17 Al1Dl2DO2 Stepper 2	2	9-14-17 T3TM1100153	9/14/2017 10:30:38 AM 3/31/2009 6:24:17 AM			
Chassis I/O firmware ve Probe I/O firmware versi Electrode E0 calibration		1.11 AI1DI0DO4 Norgren 1.1.1 T3 Electrode -7.50 mV	i/U	T3E0769	8/15/2017 10:21:54 AM 10/7/2017 12:31:09 PM			
Filling solution Liquids Wash 1		3M KCI 50% IPA:50% Water 0.5% Trition X 100 in H20		KCL095	10/4/2017 3:50:10 PM 10/6/2017 2:50:08 PM			

0.5% Trition X-100 in H20

10-6-17

pH7 Wash

8.2e+003 mL

pH 7

Wash 2

Wash water

Buffer position 1

Buffer position 2

Storage position

10/6/2017 2:50:11 PM

10/6/2017 2:50:17 PM

10/6/2017 2:50:19 PM

10/6/2017 2:50:25 PM

10/6/2017 3:04:25 PM

Batch Id

Install date



Settina

Sample name: **D08** Experiment start time: 10/7/2017 12:30:45 PM

Assay name: **UV-metric psKa** Analyst: **Dorothy Levorse**

Assay ID: 17J-07008 Instrument ID: T311053 Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r

Value

Instrument Settings (continued)

ootting	Value	Datoii ia	motan date
Waste	1.8e+003 mL		10/6/2017 3:04:33 PM
Temperature controller			8/5/2010 7:35:13 AM
Turbidity detector			3/31/2009 6:24:45 AM
Spectrometer		072390	11/23/2010 12:22:28 PM
Dip probe		11086	
Wavelength coefficient A0	185.563		
Wavelength coefficient A1	2.17439		
Wavelength coefficient A2	-0.000285622		
Total lamp lit time	391:10:29		11/23/2010 12:22:28 PM
Calibrated on	10/5/2017 10:23:25 AM		
Integration time	11		
Scans averaged	10		
Autoloader		T3AL1100237	11/10/2015 10:34:13 AM
Left-right axis firmware version	1.17 Al1Dl2DO2 Stepper 2		
Front-back axis firmware version	1.17 Al1Dl2DO2 Stepper 2		

1.17 Al1Dl2DO2 Stepper 2 Vertical axis firmware version Chassis I/O firmware version 1.11 Al1DI0DO4 Norgren I/O Configuration

Alternate titration position Titration position Alternate reference position Reference position

Maximum standard vial volume 3.50 mL Maximum alternate vial volume 25.00 mL Automatic action idle period 5 minute(s) Titrant tube volume 1.3 mL Syringe flush count 3.50 Flowing wash pump volume 20.0 mL Flowing wash stir duration 5 s 30% Flowing wash stir speed Solvent wash stir duration 5 s Solvent wash stir speed 30% Surfactant wash stir duration 5 s Surfactant wash stir speed 30% E0 calibration minimum number of points 10 E0 calibration maximum standard deviation 0.01500 E0 calibration timeout period 60 s E0 calibration stir duration 5 s E0 calibration preparation stir speed 30% E0 calibration buffer wash stir duration 5 s E0 calibration buffer wash stir speed 30% E0 calibration reading stir speed 0% Spectrometer calibration stir duration 5 s Spectrometer calibration stir speed 30% Spectrometer calibration wash pump volume 20.0 mL

Refinement Settings

Overhead dispense height

Setting	Value	Default value
Turbidity detection method	Spectrometer	Spectrometer
Turbidity wavelength to assess	500.0 nm	500.0 nm
Turbidity maximum absorbance	0.100	0.100
Turbidity probe threshold	50.00	50.00
Exclude turbid points	Yes	Yes
Low intensity warning threshold	100	100
Minimum absorbance change threshold	0.100	0.100
Eigenvector autocorrelation threshold	0.80	0.80

5 s

30%

10000

Spectrometer calibration wash stir duration

Spectrometer calibration wash stir speed





Assay name: UV-metric psKa Analyst: Dorothy Levorse

Assay ID: 17J-07008 Instrument ID: T311053
Filename: C:\Sirius_T3\Mehtap\20171006_exp14_pKa\17J-07008_D08_UV-metric psKa.t3r

Refinement Settings (continued)

Setting Value Default value

Maximum RMSD severe warning 0.250 0.250 Maximum RMSD warning 0.050 0.050

Tray Information

Title

Location G5