

Assay name: UV-metric psKa Analyst: Dorothy Levorse

Assay ID: 17J-07007 Instrument ID: T311053
Filename: C:\Sirius\_T3\Mehtap\20171006\_exp14\_pKa\17J-07007\_D08\_UV-metric psKa.t3r

# Yasuda-Shedlovsky result

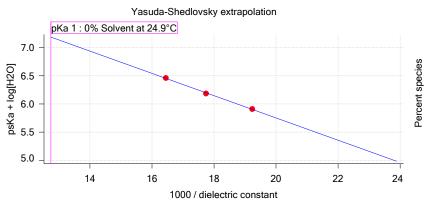
Extrapolation type pKa 0% SD Intercept Slope R<sup>2</sup> Ionic strength Temperature

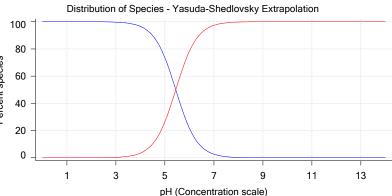
Yasuda-Shedlovsky 5.44 ±0.05 9.70 -197.7237 0.9981 0.166 M 24.9°C

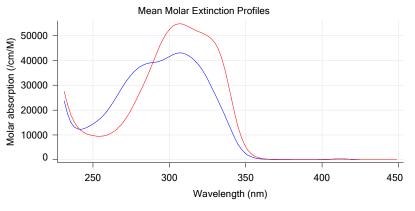
### Component assay results

Titration	Methanol weight%	Direction	Result type	Dielectric constant	[H2O]	lonic strength	Temperature		psKa 1
17J-07007 Points 4 to 70	59.29 %	Up	UV-metric pKa	52.0	19.5 M	0.157 M	24.9°C	<u></u>	4.62
17J-07007 Points 72 to 139	50.03 %	Up	UV-metric pKa	56.4	24.4 M	0.167 M	24.9°C	<u></u>	4.80
17J-07007 Points 141 to 217	40.47 %	Up	UV-metric pKa	60.8	29.7 M	0.174 M	24.9°C	<u></u>	4.99

### **Graphs**







# UV-metric psKa Titration 1 of 3 17J-07007 Points 4 to 70

### Results

pKa 1 4.62
RMSD 0.002 0.001
Chi squared 0.0075
PCA calculated number of pKas 3
Average ionic strength 0.157 M

Average ionic strength 0.157 No. 157 N

Analyte concentration range 29.3 µM to 27.6 µM

Methanol weight %59.3 %Dielectric constant52.0Water concentration19.5 M

Number of pKas source Predicted

Wavelength clipping 230.0 nm to 450.0 nm

Report by: Dorothy Levorse 10/11/2017 10:31:04 AM



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

Assay ID: 17J-07007 Instrument ID: T311053 Filename: C:\Sirius\_T3\Mehtap\20171006\_exp14\_pKa\17J-07007\_D08\_UV-metric psKa.t3r

# Results (continued)

pH clipping 1.456 to 12.552

# 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

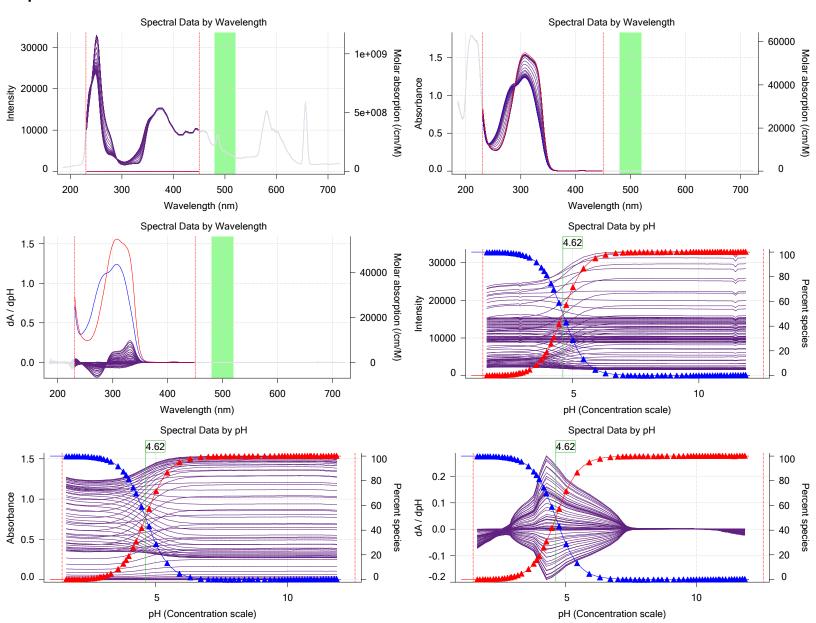
Buffer type Phosphate Buffer

Assay Medium

Volume of buffer introduced 0.025000 mL Add buffer manually

Manual

# Graphs

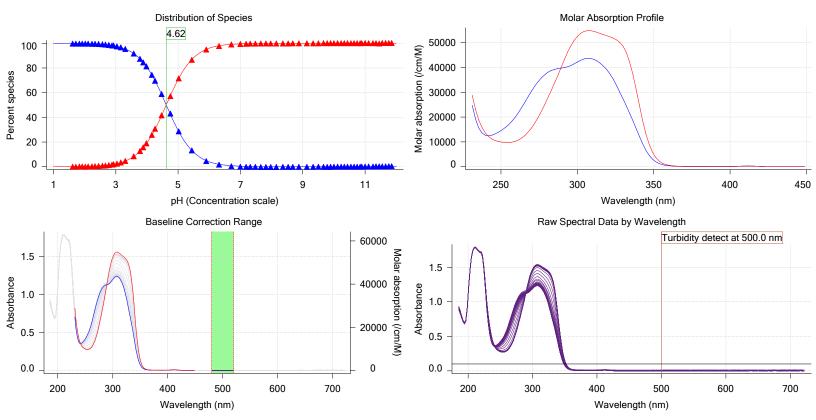




Assay name: **UV-metric psKa** Analyst: **Dorothy Levorse** 

17J-07007 Instrument ID: Assay ID: T311053 Filename: C:\Sirius\_T3\Mehtap\20171006\_exp14\_pKa\17J-07007\_D08\_UV-metric psKa.t3r

# Graphs (continued)



# UV-metric psKa Titration 2 of 3 17J-07007 Points 72 to 139

### Results

pKa 1 4.80 RMSD 0.002 0.002 Chi squared 0.0043 PCA calculated number of pKas

Average ionic strength 0.167 M

Average temperature 24.9°C Analyte concentration range

25.1 μM to 23.7 μM

Methanol weight % 50.0 % Dielectric constant 56.4 Water concentration 24.4 M

Number of pKas source **Predicted** Wavelength clipping

230.0 nm to 450.0 nm pH clipping

1.472 to 12.541

# 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 Yes Buffer type

Phosphate Buffer

Assay Medium

Report by: Dorothy Levorse 10/11/2017 10:31:04 AM



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

Assay ID: 17J-07007 Instrument ID: T311053 Filename: C:\Sirius\_T3\Mehtap\20171006\_exp14\_pKa\17J-07007\_D08\_UV-metric psKa.t3r

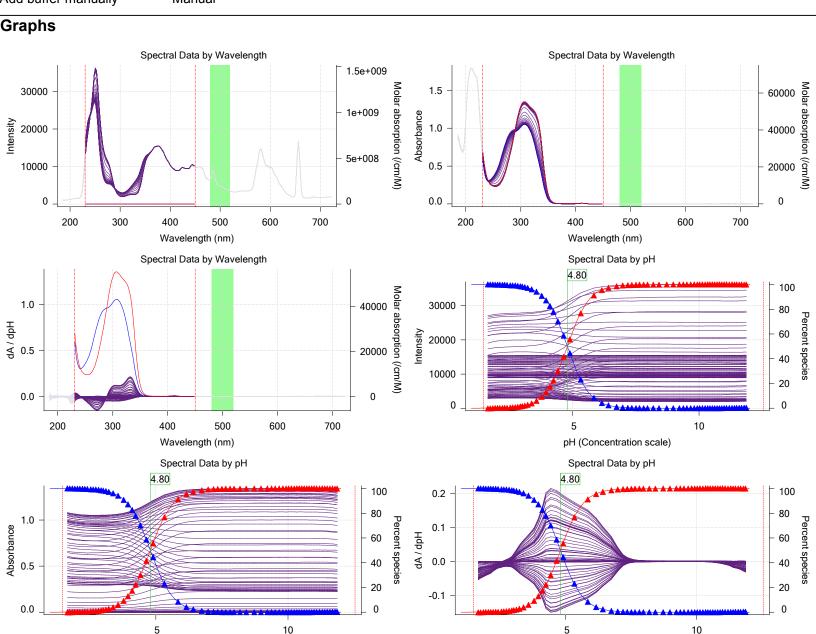
# **Assay Settings (continued)**

Value Setting

Volume of buffer introduced 0.025000 mL Add buffer manually

Manual

Original Value Date/Time changed Imported from



pH (Concentration scale)

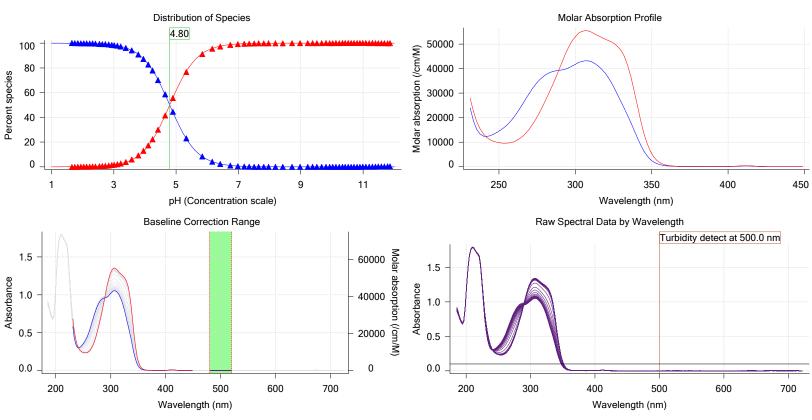
pH (Concentration scale)



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

17J-07007 Instrument ID: Assay ID: T311053 Filename: C:\Sirius\_T3\Mehtap\20171006\_exp14\_pKa\17J-07007\_D08\_UV-metric psKa.t3r

# Graphs (continued)



# UV-metric psKa Titration 3 of 3 17J-07007 Points 141 to 217

### Results

pKa 1 4.99 RMSD 0.003 0.004 Chi squared 0.0117 PCA calculated number of pKas

Average ionic strength 0.174 M Average temperature 24.9°C

Analyte concentration range

20.7 μM to 19.6 μM Methanol weight % 40.5 %

Dielectric constant 60.8 Water concentration 29.7 M

Number of pKas source **Predicted** 

Wavelength clipping 230.0 nm to 450.0 nm pH clipping

1.480 to 12.547

# 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 Yes

Phosphate Buffer

Buffer type Assay Medium

Report by: Dorothy Levorse 10/11/2017 10:31:04 AM



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

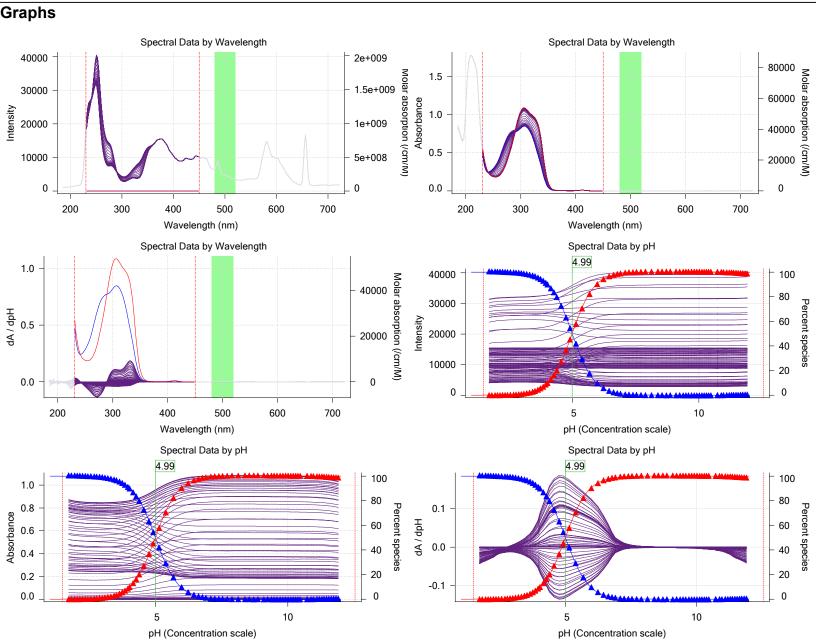
Assay ID: 17J-07007 Instrument ID: T311053 Filename: C:\Sirius\_T3\Mehtap\20171006\_exp14\_pKa\17J-07007\_D08\_UV-metric psKa.t3r

# Assay Settings (continued)

Original Value Date/Time changed Imported from Setting Value

Volume of buffer introduced 0.025000 mL Add buffer manually

Manual

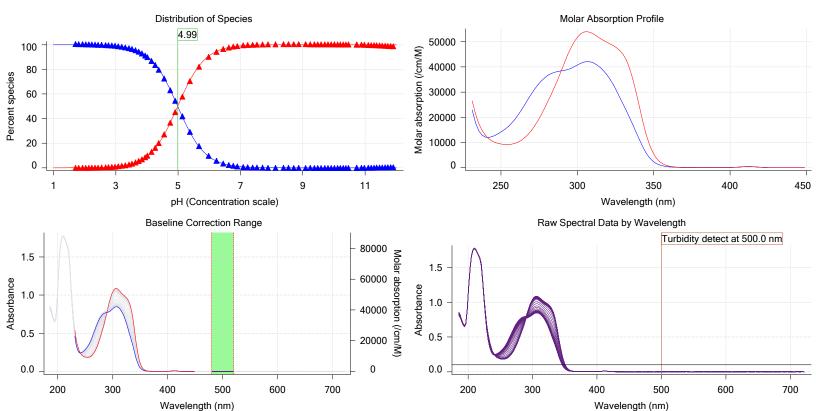




Assay name: UV-metric psKa Analyst: Dorothy Levorse

Assay ID: 17J-07007 Instrument ID: T311053
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# 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

10:59.8 Data point 9

Time	Event	Water	Acid	Base	Methanol	Buffer	рН	dpH/dt	pH R-square
3:10.1	Dark spectrum								11-3quare
3:11.6	Reference spectrum								
3:39.2	Volume reset due to vial change								
8:43.3	Initial pH = 8.01								
9:03.3	Data point 4	0.15005 mL	0.07260 mL	0.00000 mL	1.35995 mL	0.02500 mL	1.956	-0.04734	0.98570
9:31.9	Data point 5	0.15005 mL	0.07260 mL	0.01496 mL	1.35995 mL	0.02500 mL	2.056	-0.00381	0.08449
9:48.8	Data point 6	0.15005 mL	0.07260 mL	0.02775 mL	1.35995 mL	0.02500 mL	2.171	0.01090	0.85724
10:10.8	Data point 7	0.15005 mL	0.07260 mL	0.03603 mL	1.35995 mL	0.02500 mL	2.266	0.00654	0.77235
10:32.7	Data point 8	0.15005 mL	0.07260 mL	0.04262 mL	1.35995 mL	0.02500 mL	2.362	0.00412	0.58281

0.15005 mL 0.07260 mL 0.04842 mL 1.35995 mL 0.02500 mL 2.454 0.00159

0.14512

Analyst:

Experiment start time: 10/7/2017 10:32:05 AM

T311053

**Dorothy Levorse** 



Sample name: D08

Assay name: **UV-metric psKa** 

Assay ID: 17J-07007

17J-07007 Instrument ID: T31105
C:\Sirius T3\Mehtap\20171006 exp14 pKa\17J-07007 D08 UV-metric psKa.t3r Filename:

Filenam	e: <b>C:\Siri</b> ı	us_T3\Mehta	p\20171006_e	exp14_pKa\17	7J-07007_D08	ع B_UV-metric	psKa.t3r	•			
Events	s (continued	l)									
Time	Event	Water	Acid	Base	Methanol	Buffer	pН	dpH/dt	pH R-squared	pH SD	•
11:16.5	Data point 10	0.15005 mL	0.07260 mL	0.05360 mL	1.35995 mL	0.02500 mL	2.576	0.00885	0.79088	0.00049	1
11:43.6	Data point 11	0.15005 mL	0.07260 mL	0.05713 mL	1.35995 mL	0.02500 mL	2.673	-0.00369	0.41968	0.00028	1
12:00.2	Data point 12	0.15005 mL	0.07260 mL	0.06030 mL	1.35995 mL	0.02500 mL	2.782	0.00412	0.30674	0.00037	1
12:16.8	Data point 13	0.15005 mL	0.07260 mL	0.06275 mL	1.35995 mL	0.02500 mL	2.904	0.00254	0.17519	0.00030	1
12:43.8	Data point 14	0.15005 mL	0.07260 mL	0.06439 mL	1.35995 mL	0.02500 mL	3.001	0.00168	0.12367	0.00024	1
13:00.4	Data point 15	0.15005 mL	0.07260 mL	0.06587 mL	1.35995 mL	0.02500 mL	3.108	0.00755	0.77609	0.00042	1
13:17.0	Data point 16	0.15005 mL	0.07260 mL	0.06703 mL	1.35995 mL	0.02500 mL	3.207	0.00894	0.79214	0.00050	1
13:33.6	Data point 17	0.15005 mL	0.07260 mL	0.06794 mL	1.35995 mL	0.02500 mL	3.258	0.00930	0.79283	0.00052	1
14:05.4	Data point 18	0.15005 mL	0.07260 mL	0.06891 mL	1.35995 mL	0.02500 mL	3.364	0.01342	0.89463	0.00070	1
14:32.2	Data point 19	0.15005 mL	0.07260 mL	0.06954 mL	1.35995 mL	0.02500 mL	3.490	0.02031	0.96260	0.00102	1
14:48.6	Data point 20	0.15005 mL	0.07260 mL	0.07001 mL	1.35995 mL	0.02500 mL	3.630	0.02189	0.94286	0.00111	1
15:10.3	Data point 21	0.15005 mL	0.07260 mL	0.07063 mL	1.35995 mL	0.02500 mL	3.899	0.04326	0.99303	0.00214	1
15:32.1	Data point 22	0.15005 mL	0.07260 mL	0.07095 mL	1.35995 mL	0.02500 mL	4.094	0.08553	0.99488	0.00423	1
15:53.8	Data point 23	0.15005 mL	0.07260 mL	0.07114 mL	1.35995 mL	0.02500 mL	4.196	0.09115	0.99316	0.00452	1
16:15.5	Data point 24	0.15005 mL	0.07260 mL	0.07128 mL	1.35995 mL	0.02500 mL	4.299	0.08465	0.93556	0.00432	1
16:37.1	Data point 25	0.15005 mL	0.07260 mL	0.07140 mL	1.35995 mL	0.02500 mL	4.469	0.09753	0.98214	0.00486	2
17:14.8	Data point 26	0.15005 mL	0.07260 mL	0.07150 mL	1.35995 mL	0.02500 mL	4.573	0.04288	0.38469	0.00341	1
17:41.7	Data point 27	0.15005 mL	0.07260 mL	0.07157 mL	1.35995 mL	0.02500 mL	4.777	0.10053	0.98755	0.00499	5
18:32.6	Data point 28	0.15005 mL	0.07260 mL	0.07166 mL	1.35995 mL	0.02500 mL	5.056	0.09044	0.93158	0.00462	4
19:34.8	Data point 29	0.15005 mL	0.07260 mL	0.07173 mL	1.35995 mL	0.02500 mL	5.321	0.06685	0.50013	0.00466	5
20:22.4	Data point 30	0.15005 mL	0.07260 mL	0.07178 mL	1.35995 mL	0.02500 mL	5.734	0.18440	0.99709	0.00911	7
24.24.2	Data point 31	0.15005 ml	0 07260 ml	0 07193 ml	1 25005 ml	0.02500 ml	£ 102	0.2208U	0 00633	0.01136	a
∠1.3 <del>4</del> .∠	Data point 31	U. 13003 IIIL	0.07260 IIIL	U.U/ 103 IIIL	1.33993 IIIL	0.02500 IIIL	0.192	0.22980	0.99623	0.01130	(
22:45.8	Data point 32	0.15005 mL	0.07260 mL	0.07187 mL	1.35995 mL	0.02500 mL	6.593	0.09979	0.97140	0.00500	5
24:01.7	Data point 33	0.15005 mL	0.07260 mL	0.07194 mL	1.35995 mL	0.02500 mL	6.986	0.09786	0.98986	0.00486	5
25:13.0	Data point 34	0.15005 mL	0.07260 mL	0.07201 mL	1.35995 mL	0.02500 mL	7.267	0.09940	0.97611	0.00496	3
26:07.7	Data point 35	0.15005 mL	0.07260 mL	0.07208 mL	1.35995 mL	0.02500 mL	7.452	0.10039	0.99334	0.00497	8
26:56.4	Data point 36	0.15005 mL	0.07260 mL	0.07215 mL	1.35995 mL	0.02500 mL	7.581	0.09777	0.93909	0.00498	1

27:28.1 Data point 37 0.15005 mL 0.07260 mL 0.07222 mL 1.35995 mL 0.02500 mL 7.742 0.09960 0.99388

0.00493 2



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17J-07007 Instrument ID: Assay ID: T311053

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Filename: C:\Sirius_I3\Mentap\20171006_exp14_pKa\17J-07007_D08_UV-metric psKa.t3r										_
Events (	continued)									
Time	Event	Water	Acid	Base	Methanol	Buffer	рН	dpH/dt	pH R-squared	pl Si
42:42.0	Data point 67		0.07260 mL					-0.00185		0.
42:58.6	Data point 68		0.07260 mL					-0.00486	0.39268	0.
43:15.3	Data point 69		0.07260 mL							0.
43:32.1	Data point 70	0.15005 mL	0.07260 mL	0.09986 mL	1.35995 mL	0.02500 mL	12.052	-0.01020	0.76020	0.
45:07.8	Reference spectrum	0.00004	0.47000	0.0000!	1 25005 ml	0.00500!	4.070	0.04067	0.00000	^
46:10.5	Data point 72		0.17260 mL					-0.04867	0.93802	0.
46:32.5 46:54.6	Data point 73 Data point 74		0.17260 mL 0.17260 mL					0.00820 0.02770	0.64140 0.84315	0. 0.
40.34.0 47:16.4	Data point 75		0.17260 mL					0.02776	0.82359	0.
47:38.4	Data point 76		0.17260 mL					0.02473	0.95165	0.
48:00.3	Data point 77		0.17260 mL					0.01312	0.92887	0.
48:22.1	Data point 78		0.17260 mL					0.01394	0.90993	Ō.
48:43.9	Data point 79		0.17260 mL					0.01046	0.88585	0.
49:10.9	Data point 80		0.17260 mL					0.01131	0.86202	0.
49:27.6	Data point 81		0.17260 mL					0.02014	0.92300	0.
49:49.5	Data point 82		0.17260 mL					0.00756	0.73547	0.
50:16.4	Data point 83		0.17260 mL					0.01326	0.89683	0.
50:33.1	Data point 84		0.17260 mL					0.01088	0.85467	0.
50:49.6	Data point 85		0.17260 mL					0.01338	0.91621	0.
51:06.2	Data point 86		0.17260 mL					0.01378	0.95817	0.
51:38.0 52:04.8	Data point 87 Data point 88		0.17260 mL 0.17260 mL					0.01714 0.02106	0.96363 0.97407	0. 0.
52:04.6 52:21.4	Data point 89		0.17260 mL					0.02100	0.96100	0.
52:43.0	Data point 90		0.17260 mL					0.02450	0.97689	0.
53:04.6	Data point 91		0.17260 mL					0.06142	0.99078	0.
53:26.4	Data point 92		0.17260 mL					0.08269	0.99169	Ō.
53:48.1	Data point 93		0.17260 mL					0.10027	0.98575	0.
54:17.9	Data point 94		0.17260 mL					0.10023	0.98300	0.
54:52.2	Data point 95		0.17260 mL					0.09984	0.99701	0.
55:42.2	Data point 96		0.17260 mL					0.09362	0.91224	0.
56:26.6	Data point 97		0.17260 mL					0.09632	0.97426	0.
57:22.0	Data point 98		0.17260 mL					0.10058	0.99374	0.
58:37.6	Data point 99		0.17260 mL					0.10986	0.98910	0.
59:49.2 1:00:53.9	Data point 100		0.17260 mL 0.17260 mL					0.10008 0.10046	0.99268 0.99276	0. 0.
	Data point 101							0.09602		0.
	Data point 102 Data point 103		0.17260 mL 0.17260 mL					0.09890	0.98741 0.99080	0.
1:03:35.3			0.17260 mL					0.09847	0.98637	0.
1:04:19.4			0.17260 mL					0.09830	0.99235	0.
	Data point 106		0.17260 mL					0.09844	0.98737	0.
	Data point 107	0.22001 mL	0.17260 mL	0.17001 mL	1.35995 mL	0.02500 mL	7.887	0.09936	0.99532	0.
1:06:19.6	Data point 108	0.22001 mL	0.17260 mL	0.17008 mL	1.35995 mL	0.02500 mL	8.048	0.09808	0.98886	0.
	Data point 109		0.17260 mL					0.09972	0.99392	0.
	Data point 110		0.17260 mL					0.09849	0.98935	0.
	Data point 111		0.17260 mL					0.09564	0.97309	0.
1:09:12.7			0.17260 mL					0.09851	0.98423	0.
			0.17260 mL					0.09711	0.98998	0.
1:10:45.5 1:11:29.7	Data point 114 Data point 115		0.17260 mL 0.17260 mL					0.09715 0.09722	0.98298 0.98237	0. 0.
			0.17260 mL					0.09722	0.98244	0.
	Data point 117		0.17260 mL					0.09521	0.97926	0.
			0.17260 mL					0.09027	0.97727	0.
	Data point 119		0.17260 mL						0.97863	Õ.
	Data point 120		0.17260 mL						0.97944	0.
			0.17260 mL						0.97669	0.
	Data point 122		0.17260 mL						0.96453	0.
1:14:52.0	Data point 123	0.22001 mL	0.17260 mL	0.17161 mL	1.35995 mL	0.02500 mL	10.543	0.02062	0.96150	0.



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riiename:	C:\Sirius_i 3\wi	entap\201710 	exp14_pi	\a\1/J-0/00/	ouo_uv-me	etric pska.tar				
Events (	(continued)									
Time	Event	Water	Acid	Base	Methanol	Buffer	рН	dpH/dt	pH R-squared	pl Si
1:15:08.7	Data point 124	0.22001 mL	0.17260 mL	0.17187 mL	1.35995 mL	0.02500 mL	10.631	0.01091	0.76280	0.
1:15:25.2	Data point 125	0.22001 mL	0.17260 mL	0.17220 mL	1.35995 mL	0.02500 mL	10.723	0.00916	0.88365	0.
1:15:41.9	Data point 126	0.22001 mL	0.17260 mL	0.17260 mL	1.35995 mL	0.02500 mL	10.817	0.00672	0.78919	0.
1:15:58.6	Data point 127	0.22001 mL	0.17260 mL	0.17310 mL	1.35995 mL	0.02500 mL	10.910	0.00120	0.11926	0.
1:16:15.1	Data point 128			0.17371 mL				-0.00133	0.11213	0.
1:16:31.6	Data point 129	0.22001 mL	0.17260 mL	0.17446 mL	1.35995 mL	0.02500 mL	11.093	-0.00095		0.
1:16:48.1	Data point 130			0.17540 mL				-0.00353	0.55930	0.
1:17:04.7	Data point 131	0.22001 mL	0.17260 mL	0.17658 mL	1.35995 mL	0.02500 mL	11.280	-0.00204	0.25193	0.
1:17:21.3	Data point 132	0.22001 mL	0.17260 mL	0.17803 mL	1.35995 mL	0.02500 mL	11.387	-0.00222	0.27507	0.
1:17:37.8				0.17989 mL				-0.00370		0.
1:17:54.4				0.18227 mL				-0.00730		0.
1:18:11.1	Data point 135			0.18521 mL				-0.00269		0.
	Data point 136			0.18885 mL				-0.00385		0.
1:18:44.7	•			0.19346 mL				-0.00502		0.
1:19:01.4	Data point 138			0.19920 mL				-0.00561		0.
1:19:18.2	•	0.22001 mL	0.17260 mL	0.20527 mL	1.35995 mL	0.02500 mL	12.041	-0.00298	0.40625	0.
1:21:00.3										
1:22:20.6	Data point 141			0.20529 mL				-0.07137		0.
1:22:48.0	Data point 142			0.22187 mL				-0.00169		0.
1:23:04.9	Data point 143			0.23638 mL				-0.01328		0.
1:23:26.8	•			0.24457 mL				0.00608	0.24326	0.
1:23:48.9	Data point 145			0.25155 mL				0.01824	0.96245	0.
1:24:15.9	Data point 146			0.25736 mL				0.00966	0.85953	0.
1:24:37.7	Data point 147			0.26160 mL				0.01682	0.94637	0.
1:25:04.5	Data point 148			0.26543 mL				0.00832	0.86061	0.
1:25:21.1	Data point 149			0.26896 mL				0.01099	0.82268	0.
1:25:37.8	Data point 150			0.27166 mL				0.01698	0.86730	0.
1:26:04.6				0.27347 mL				0.00384	0.49968	0.
1:26:21.2				0.27512 mL				0.00128	0.08583	0.
1:26:37.8	Data point 153			0.27641 mL				0.00718	0.63231	0.
1:26:54.3	Data point 154			0.27742 mL				0.01000	0.86453	0.
1:27:10.9	Data point 155			0.27822 mL				0.01145	0.89193	0.
1:27:27.4	Data point 156			0.27883 mL				0.01369	0.86932	0.
1:27:44.0				0.27930 mL				0.02082	0.93278	0.
1:28:05.7				0.27963 mL				0.02169	0.94751	0.
	Data point 159			0.27992 mL				0.02854	0.95475	0.
	Data point 160			0.28013 mL				0.04244	0.98130	0. 0.
	Data point 161			0.28029 mL				0.04529	0.98378	
1:29:12.1	Data point 162			0.28043 mL				0.06041 0.06785	0.98929 0.99216	0. 0.
1:29:28.6 1:29:50.3				0.28053 mL 0.28064 mL				0.00765	0.97969	0.
1:30:06.7	•			0.28071 mL				0.09009	0.99362	0.
				0.28071 IIIL				0.09972	0.98076	0.
	Data point 166 Data point 167			0.28086 mL				0.09930	0.98948	0.
1:31:02.2 1:31:39.4				0.28093 mL				0.09621	0.98868	0.
1:32:16.5				0.28097 mL				0.09922	0.99136	0.
1:32:10.5	Data point 170			0.28102 mL				0.09738	0.99279	0.
1:33:42.8				0.28107 mL				0.10040	0.99188	0.
	Data point 171			0.28107 IIIL 0.28112 mL				0.10037	0.99223	0.
	Data point 172  Data point 173			0.28116 mL				0.10044	0.99240	0.
	Data point 173			0.28121 mL				0.09978	0.99566	0.
	Data point 174  Data point 175			0.28121 mL				0.09327	0.98595	0.
	Data point 175			0.28130 mL				0.09703	0.98791	0.
	Data point 177			0.28135 mL				0.09727	0.99007	0.
	Data point 177			0.20133 IIIL				0.09909		0. n

0.39005 mL 0.29487 mL 0.28140 mL 1.35995 mL 0.02500 mL 7.107 0.09940 0.99319

0.39005 mL 0.29487 mL 0.28147 mL 1.35995 mL 0.02500 mL 7.295 0.09775 0.99021

1:38:45.6 Data point 178 1:39:19.7 Data point 179

1:39:55.0 Data point 180

0.09674 0.97122

0.

0.



Assay name: UV-metric psKa Analyst: Dorothy Levorse

Assay ID: 17J-07007 Instrument ID: T311053

Filename: C:\Sirius\_T3\Mehtap\20171006\_exp14\_pKa\17J-07007\_D08\_UV-metric psKa.t3r

# Events (continued)

,	(Jointinada)									
Time	Event	Water	Acid	Base	Methanol	Buffer	рН	dpH/dt	pH R-squared	pH SD
1:40:28.4	Data point 181	0.39005 mL	0.29487 mL	0.28161 mL	1.35995 mL	0.02500 mL	7.593	0.09763	0.99343	0.0048
1:41:03.1	Data point 182	0.39005 mL	0.29487 mL	0.28168 mL	1.35995 mL	0.02500 mL	7.731	0.10004	0.99163	0.0049
1:41:36.8	Data point 183	0.39005 mL	0.29487 mL	0.28175 mL	1.35995 mL	0.02500 mL	7.906	0.09725	0.98022	0.0048
1:42:13.1	Data point 184	0.39005 mL	0.29487 mL	0.28182 mL	1.35995 mL	0.02500 mL	8.083	0.09714	0.98580	0.0048
1:42:49.8	Data point 185	0.39005 mL	0.29487 mL	0.28189 mL	1.35995 mL	0.02500 mL	8.318	0.09678	0.98984	0.0048
1:43:31.5	Data point 186	0.39005 mL	0.29487 mL	0.28196 mL	1.35995 mL	0.02500 mL	8.571	0.09889	0.98218	0.0049
1:44:08.6	Data point 187	0.39005 mL	0.29487 mL	0.28201 mL	1.35995 mL	0.02500 mL	8.731	0.09923	0.97318	0.0049
1:44:41.6	Data point 188	0.39005 mL	0.29487 mL	0.28206 mL	1.35995 mL	0.02500 mL	8.899	0.09574	0.98392	0.0047
1:45:14.8	Data point 189	0.39005 mL	0.29487 mL	0.28210 mL	1.35995 mL	0.02500 mL	9.053	0.09833	0.98354	0.0048
1:45:52.1	Data point 190	0.39005 mL	0.29487 mL	0.28217 mL	1.35995 mL	0.02500 mL	9.275	0.09963	0.98195	0.0049
1:46:28.5	Data point 191	0.39005 mL	0.29487 mL	0.28224 mL	1.35995 mL	0.02500 mL	9.420	0.09758	0.97973	0.0048
1:46:59.1	Data point 192	0.39005 mL	0.29487 mL		1.35995 mL		9.554	0.10035	0.98769	0.0049
1:47:28.3	Data point 193	0.39005 mL	0.29487 mL	0.28239 mL	1.35995 mL	0.02500 mL	9.660	0.09177	0.97030	0.0046
1:47:50.0	Data point 194	0.39005 mL	0.29487 mL	0.28246 mL	1.35995 mL	0.02500 mL	9.763	0.08241	0.95920	0.0041
1:48:11.6	Data point 195	0.39005 mL	0.29487 mL	0.28255 mL	1.35995 mL	0.02500 mL	9.884	0.07236	0.96151	0.0036
1:48:38.5	Data point 196	0.39005 mL	0.29487 mL		1.35995 mL		9.985	0.04900	0.95527	0.0024
1:49:00.1	Data point 197	0.39005 mL	0.29487 mL		1.35995 mL		10.086	0.03562	0.97890	0.0017
1:49:21.6	Data point 198	0.39005 mL	0.29487 mL	0.28297 mL	1.35995 mL	0.02500 mL	10.187	0.02935	0.95122	0.0014
1:49:38.2	Data point 199	0.39005 mL	0.29487 mL	0.28314 mL	1.35995 mL	0.02500 mL	10.287	0.01696	0.93225	0.0008
1:49:54.6	Data point 200	0.39005 mL	0.29487 mL	0.28335 mL	1.35995 mL	0.02500 mL	10.374	0.01188	0.93142	0.0006
1:50:11.3	Data point 201	0.39005 mL	0.29487 mL	0.28361 mL	1.35995 mL	0.02500 mL	10.464	0.00826	0.78693	0.0004
1:50:27.9	Data point 202	0.39005 mL	0.29487 mL	0.28391 mL	1.35995 mL	0.02500 mL	10.549	0.00560	0.52204	0.0003
1:50:44.3	Data point 203	0.39005 mL	0.29487 mL	0.28429 mL	1.35995 mL	0.02500 mL	10.634	0.00415	0.43999	0.0003
1:51:21.6	Data point 204	0.39005 mL	0.29487 mL	0.28476 mL	1.35995 mL	0.02500 mL	10.891	-0.01451	0.94552	0.0007
1:51:38.1	Data point 205	0.39005 mL	0.29487 mL	0.28558 mL	1.35995 mL	0.02500 mL	10.894	-0.01373	0.93433	0.0007
1:51:59.9	Data point 206	0.39005 mL			1.35995 mL			-0.01075	0.83367	0.0005
1:52:26.9	Data point 207	0.39005 mL	0.29487 mL	0.28925 mL	1.35995 mL			-0.00569	0.72089	0.0003
1:52:43.5	Data point 208	0.39005 mL	0.29487 mL	0.29066 mL	1.35995 mL	0.02500 mL	11.258	-0.00925	0.77963	0.0005
1:53:10.5	Data point 209	0.39005 mL	0.29487 mL	0.29257 mL	1.35995 mL	0.02500 mL	11.352	-0.00804	0.86528	0.0004
1:53:27.0	Data point 210	0.39005 mL	0.29487 mL	0.29490 mL	1.35995 mL	0.02500 mL	11.444	-0.00959	0.83028	0.0005
1:53:43.6	Data point 211	0.39005 mL		0.29781 mL	1.35995 mL	0.02500 mL	11.520	-0.01099	0.86837	0.0005
1:54:10.4	Data point 212	0.39005 mL	0.29487 mL	0.30078 mL	1.35995 mL	0.02500 mL	11.616	-0.00636	0.74874	0.0003
1:54:27.0	Data point 213	0.39005 mL		0.30513 mL	1.35995 mL	0.02500 mL	11.698	-0.00875	0.74135	0.0005
1:54:48.7	Data point 214	0.39005 mL	0.29487 mL	0.30997 mL	1.35995 mL	0.02500 mL	11.789	-0.00763	0.75897	0.0004
1:55:05.6	Data point 215	0.39005 mL	0.29487 mL	0.31653 mL	1.35995 mL	0.02500 mL	11.876	-0.00898	0.81222	0.0004
4.55.00 4	Data :- t 040	0.000051	0.00407 1	0.00400 1	4.05005 !	0.00500 !	44 000	0.00540	0.50777	0.0000

1:55:22.4 Data point 216 0.39005 mL 0.29487 mL 0.32462 mL 1.35995 mL 0.02500 mL 11.966 -0.00516 0.52777

1:55:39.1 Data point 217 0.39005 mL 0.29487 mL 0.33293 mL 1.35995 mL 0.02500 mL 12.047 -0.00676 0.68026

1:57:38.0 Assay volumes 0.64005 mL 0.42161 mL 0.33293 mL 1.35995 mL 0.02500 mL

# Assay Settings

Setting

General Settings	
Analyst name	Dorothy Levorse
Separate reference vial	Yes
Standard Experiment Settings	
Number of titrations	3
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%
Start titration using	Cautious pH adjust

Value

# Start titration using Advanced General Settings

Detect turbidity using Spectrometer
Monitor at a wavelength of Sol.0 nm
Absorbance threshold of 0.100

### Original Value Date/Time changed Imported from

0.0003

0.0004

Report by: Dorothy Levorse 10/11/2017 10:31:04 AM Page 11 of 15



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

Assay ID: 17J-07007 Instrument ID: T311053 Filename:

C:\Sirius\_T3\Mehtap\20171006\_exp14\_pKa\17J-07007\_D08\_UV-metric psKa.t3r

### Assay Settings (continued)

Setting	Value	Original Value	Date/Time changed	Imported from

Collect turbidity sensor data No Stir after titrant addition for 5 seconds

For titrant addition, stir at 15%

Titrant Pre-Dose

Titrant pre-dose None

Assay Medium

Cosolvent in use Yes Cosolvent type Methanol 1.35 mL Cosolvent volume 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

Wait for temperature Yes 25.0°C Required start temperature 0.5°C Acceptable deviation

60 seconds Time to wait 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 0.00500 dpH/dt

Stability timeout after Experiment cleanup Adjust pH to cleanup

Report by: Dorothy Levorse 10/11/2017 10:31:04 AM

60 seconds

To start pH

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

17J-07007 Assay ID: Instrument ID: T311053 Filename: C:\Sirius\_T3\Mehtap\20171006\_exp14\_pKa\17J-07007\_D08\_UV-metric psKa.t3r

### Assay Settings (continued)

Original Value Date/Time changed Imported from Setting Value

60 seconds And then stir for For cleaning, stir at 20% Then add water volume 0.25 mL And then stir for

30 seconds

### Calibration Settings

Setting	value	Date/Time changed	Imported from
Four-Plus alpha	0.161	10/7/2017 10:32:05 AM	C:\Sirius_T3\17J-06018_Blank standardisation.t3r
Four-Plus S	0.9927	10/7/2017 10:32:05 AM	C:\Sirius_T3\17J-06018_Blank standardisation.t3r
Four-Plus jH	0.5	10/7/2017 10:32:05 AM	C:\Sirius_T3\17J-06018_Blank standardisation.t3r
Four-Plus jOH	-0.7	10/7/2017 10:32:05 AM	C:\Sirius_T3\17J-06018_Blank standardisation.t3r
Base concentration factor	1.011	10/7/2017 10:32:05 AM	C:\Sirius_T3\KOH17I22.t3r
Acid concentration factor	1.003	10/7/2017 10:32:05 AM	C:\Sirius_T3\17J-06018_Blank standardisation.t3r

### Instrument Settings

Setting Instrument owner Instrument ID Instrument type	Value Merck T311053 T3 Simulator	Batch Id	Install date
Software version	1.1.3.0		
Dispenser module		T3DM1100253	3/31/2009 6:24:52 AM
Dispenser 0	Water		3/31/2009 6:25:05 AM
Syringe volume	2.5 mL		
Firmware version	1.2.1(r2)	0 10 17	0/26/2017 0:05:04 AM
Titrant	Water (0.15 M KCI) Acid	8-18-17	9/26/2017 9:05:04 AM 3/31/2009 6:25:11 AM
Dispenser 2	0.5 mL		3/3 1/2009 6.25. 11 AIVI
Syringe volume Firmware version	1.2.1(r2)		
Titrant	Acid (0.5 M HCl)	166040 and 172975	10/6/2017 2:55:40 PM
Dispenser 1	Base	100940 and 172075	3/31/2009 6:25:21 AM
Syringe volume	0.5 mL		3/31/2009 0.23.21 AW
Firmware version	1.2.1(r2)		
Titrant	Base (0.5 M KOH)	9-22-17	9/22/2017 4:02:42 PM
Dispenser 5	Cosolvent	0 ZZ 11	3/31/2009 6:26:24 AM
Syringe volume	2.5 mL		0,01,2000 0.20.21, 11
Firmware version	1.2.1(r2)		
Distribution valve 5	Distribution Valve		3/31/2009 6:28:19 AM
Firmware version	1.1.3		
Port A	Methanol (80%, 0.15 M KCl)	9-26-17	10/5/2017 5:02:03 PM
Port B	Cyclohexane		9/19/2017 2:15:02 PM
Port C	MeCN (50%, 0.15 M KCI)	10-2-17	10/2/2017 11:28:55 AM
Dispenser 3	Buffer		8/3/2010 6:05:16 AM
Syringe volume	0.5 mL		
Firmware version	1.2.1(r2)		
Titrant	Phosphate Buffer		9/12/2017 12:32:29 PM
Dispenser 6	Octanol		10/22/2010 11:52:43 AM
Syringe volume	0.5 mL		
Firmware version	1.2.1(r2)		
Titrant	Octanol	9-14-17	9/14/2017 10:30:38 AM
Titrator		T3TM1100153	3/31/2009 6:24:17 AM
Horizontal axis firmware version			
Vertical axis firmware version	1.17 Al1Dl2DO2 Stepper 2		
Chassis I/O firmware version	1.11 Al1Dl0DO4 Norgren I/O		
Probe I/O firmware version Electrode	1.1.1 T3 Electrode	T3E0769	8/15/2017 10:21:54 AM
E0 calibration	-7.91 mV	130/09	10/7/2017 10:21:54 AM
Lo Calibration	-1.31 IIIV		10/1/2017 10.32.29 AW



Assay name: UV-metric psKa Analyst: Dorothy Levorse

Assay ID: 17J-07007 Instrument ID: T311053
Filename: C:\Sirius\_T3\Mehtap\20171006\_exp14\_pKa\17J-07007\_D08\_UV-metric psKa.t3r

# Instrument Settings (continued)

• "		5 ( ) ) )	
Setting	Value	Batch Id	Install date
Filling solution	3M KCI	KCL095	10/4/2017 3:50:10 PM
Liquids Wash 1	50% IPA:50% Water		10/6/2017 2:50:08 PM
Wash 2	0.5% Trition X-100 in H20		10/6/2017 2:50:11 PM
Buffer position 1	pH7 Wash		10/6/2017 2:50:17 PM
Buffer position 2	•		
Storage position	pH 7		10/6/2017 2:50:19 PM 10/6/2017 2:50:25 PM
Wash water	8.4e+003 mL	10-6-17	10/6/2017 3:04:25 PM
Waste	1.6e+003 mL	10-0-17	10/6/2017 3:04:33 PM
Temperature controller	1.0e+003 IIIL		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	11/25/2010 12:22:201 W
Wavelength coefficient A0	185.563	11000	
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		
Vertical axis firmware version	1.17 Al1Dl2DO2 Stepper 2		
Chassis I/O firmware version	1.11 Al1Dl0DO4 Norgren I/O		
Configuration	Ğ		
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		
Flowing wash stir speed	30%		
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 E0 calibration buffer wash stir duration	30% 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		
Spectrometer calibration wash stir duration	5 s		
Spectrometer calibration wash stir speed	30%		
Overhead dispense height	10000		
5. Silioda diopolido fidigili			

# **Assay Settings**



Sample name: D08 Experiment start time: 10/7/2017 10:32:05 AM

Assay name: UV-metric psKa Analyst: Dorothy Levorse

Assay ID: 17J-07007 Instrument ID: T311053
Filename: C:\Sirius\_T3\Mehtap\20171006\_exp14\_pKa\17J-07007\_D08\_UV-metric psKa.t3r

# Refinement Settings

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	
Maximum RMSD severe warning	0.250	0.250	
Maximum RMSD warning	0.050	0.050	
Maximum RMSD warning	0.050	0.050	

# **Tray Information**

Title

Location G3