Serial No. B201599511

8/28/2012 8:49:48 AM

Method: CPC CPC

Start time: 8/28/2012 9:20:35

AM

### Sample data

No.	Comment / ID	Start time	Sample size	Corr. f	Density
1/6	SODIUM DODECYL SULFATE	8/28/2012 9:20:36 AM	1.0 mL	1.0	1 g/mL
2/6	SODIUM DODECYL SULFATE	8/28/2012 9:31:51 AM	1.0 mL	1.0	1 g/mL
3/6	SODIUM DODECYL SULFATE	8/28/2012 9:42:58 AM	1.0 mL	1.0	1 g/mL
4/6	SODIUM DODECYL SULFATE	8/28/2012 9:54:03 AM	1.0 mL	1.0	1 g/mL
5/6	SODIUM DODECYL SULFATE	8/28/2012 10:05:08 AM	1.0 mL	1.0	1 g/mL
6/6	SODIUM DODECYL SULFATE	8/28/2012 10:16:28 AM	1.0 mL	1.0	1 g/mL

#### Results

No.	Comment / ID	Start time	Sample size and results
1/6	SODIUM DODECYL SULFATE	8/28/2012 9:20:36 AM	1.0 mL
2/6	SODIUM DODECYL SULFATE	8/28/2012 9:31:51 AM	R1 = 0.99334 Titer 1.0 mL
3/6	SODIUM DODECYL SULFATE	8/28/2012 9:42:58 AN	R1 = 0.99252 Titer 1.0 mL
4/6	SODIUM DODECYL SULFATE	8/28/2012 9:54:03 AM	R1 = 0.99366 Titer 1.0 mL
5/6	SODIUM DODECYL SULFATE	8/28/2012 10:05:08 A	R1 = 0.99298 Titer  M 1.0 mL
6/6	SODIUM DODECYL SULFATE	8/28/2012 10:16:28 A	R1 = 0.99496 Titer M 1.0 mL
-/-			R1 = 0.99160 Titer R2 = 0.99318 Mean Titer
Titer	Titer	0.99318	

#### **Series comment**

LabX 3.1.1 / admin Page 1 of 22 8/28/2012 4:46:42 PM

ETTLER TOLEDO T90 3.1.4 Serial No. B201599511

8/28/2012 8:49:48 AM

**CPC** 

Start time: 8/28/2012 9:20:35

AM

**CPC** 

**Statistics** 

Method:

#### Rx Name Mean value Unit n srel [%] S R1 Titer 6 0.99318 0.00113 0.114 Mean Titer NaN R2 1 0.99318 NaN

#### Raw data

Sample

No. 1/6

Standard SODIUM DODECYL SULFATE

Type of standard liquid

Comment

Titration stand Rondolino TTL 1
Fixed volume m = 1.0 mLDensity d = 1 g/mLCorrection factor f = 1.0

Concentration c = 0.04855 mol/LTemperature T = 25.0 oC

Sample start 8/28/2012 9:20:36 AM Sample end 8/28/2012 9:31:51 AM

Dispense (normal) [1]

Titrant SDS cDi = 0.04855 mol/L TITERDi = 1.0

Disp. volume VENDDi = 1.0 mL

Disp. amount QENDDi = 0.048550 mmol

Time 0:09 min

**EQP** titration [1]

Titrant CPC c = 0.01 mol/L TITER = 1.03808

Sensor DP5

Start potential EST = 1001.3 mV

No. of EQPs and cand. nEQ = 1

Consumption EQP1 VEQ1 = 4.887564 mL (9)

Q1 = 0.050737 mmol (9) EEQ1 = 361.3 mV (9) EHNV1 = 898.9 mV

Excess  $\begin{array}{ccc} VEX = & 5.112436 \text{ mL} \\ QEX = & 0.053071 \text{ mmol} \\ VEND = & 10.0000 \text{ mL} \\ \end{array}$ 

QEND = 0.103808 mmol

Termination at Max volTime t = 9:48 min

Calculation

Result R1 = 0.99334 -- Titer Formula  $R1=m/(VEQ^*c^*C)$ 

Constant 1/(cst\*z)

C = 20.597322

Molar mass M[SODIUM DODECYL SULFATE] = 288.38 g/mol

Equivalent number z[SODIUM DODECYL SULFATE] = 1

Duration tUSE = 10:45 min

Measured values EQP titration [1]

Titrant CPC c = 0.01 mol/L TITER = 1.03808

Sensor DP5 Sample 1/6 Method:

**CPC** 

**CPC** 

8/28/2012 8:49:48 AM

Start time: 8/28/2012 9:20:35 AM

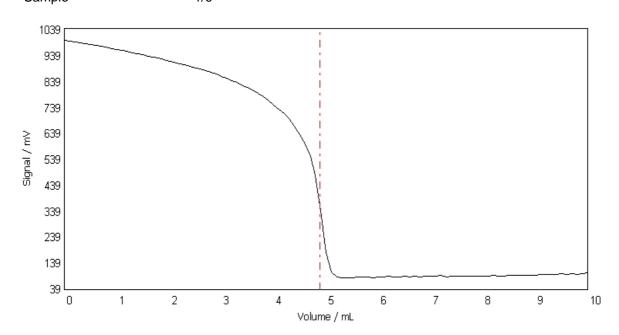
	Volume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
	Volume	Increment	Signal	Change	1st deriv.	Time	Temperature
	mL 0.0000	mL	mV	mV	mV/mL	s	oC
	0.0000 0.1000	NaN 0.1000	1001.3 998.8	NaN -2.5	NaN NaN	0 5	25.0 25.0
	0.2000	0.1000	995.8	-3.0	NaN	10	25.0
	0.3000	0.1000	992.7	-3.1	NaN	15	25.0
	0.4000	0.1000	989.4	-3.3	NaN	20	25.0
	0.5000	0.1000	985.6	-3.8	-35.90	25	25.0
	0.6000 0.7000	0.1000 0.1000	982.4 978.4	-3.2 -4.0	-37.58 -39.67	30 36	25.0 25.0
	0.8000	0.1000	974.6	-3.8	-39.23	41	25.0
	0.9000	0.1000	970.0	-4.6	-40.47	46	25.0
	1.0000	0.1000	966.2	-3.8	-41.32	51	25.0
	1.1000	0.1000	962.1	-4.1	-41.54	56	25.0
	1.2000	0.1000	958.9	-3.2	-41.50	61 66	25.0
	1.3000 1.4000	0.1000 0.1000	953.0 949.6	-5.9 -3.4	-42.51 -42.80	66 71	25.0 25.0
	1.5000	0.1000	945.2	-4.4	-43.43	71 76	25.0
	1.6000	0.1000	941.1	-4.1	-45.25	81	25.0
	1.7000	0.1000	936.0	-5.1	-45.55	86	25.0
	1.8000	0.1000	932.2	-3.8	-48.33	92	25.0
	1.9000	0.1000	926.3	-5.9	-48.55	97	25.0
	2.0000 2.1000	0.1000 0.1000	921.4 917.4	-4.9 -4.0	-49.05 -49.37	102 107	25.0 25.0
	2.2000	0.1000	911.7	-4.0 -5.7	-49.37 -51.69	112	25.0
	2.3000	0.1000	906.9	-4.8	-51.69	117	25.0
	2.4000	0.1000	901.4	-5.5	-53.98	123	25.0
	2.5000	0.1000	895.7	-5.7	-56.15	128	25.0
	2.6000	0.1000	889.6	-6.1	-59.76	133	25.0
	2.7000	0.1000	884.8	-4.8	-65.81	138	25.0
	2.8000 2.9000	0.1000 0.1000	877.3 869.8	-7.5 -7.5	-70.95 -74.59	143 148	25.0 25.0
	3.0000	0.1000	861.4	-7.3 -8.4	-74.59 -79.59	154	25.0
	3.1000	0.1000	853.7	-7.7	-81.68	159	25.0
	3.2000	0.1000	846.0	-7.7	-81.76	164	25.0
	3.3000	0.1000	837.8	-8.2	-85.59	169	25.0
	3.4000	0.1000	827.5	-10.3	-92.16	174	25.0
	3.5000 3.6000	0.1000 0.1000	819.7 808.8	-7.8 -10.9	-98.89 -110.35	179 184	25.0 25.0
	3.7000	0.1000	796.6	-12.2	-123.94	190	25.0
	3.8000	0.1000	783.9	-12.7	-136.94	195	25.0
	3.9000	0.1000	770.5	-13.4	-152.23	201	25.0
	4.0000	0.1000	751.9	-18.6	-164.13	206	25.0
	4.1000	0.1000	735.6	-16.3	-180.63	212	25.0
	4.2000 4.3000	0.1000 0.1000	717.4 694.6	-18.2 -22.8	-201.52 -226.04	217 222	25.0 25.0
	4.4000	0.1000	670.2	-24.4	-241.58	227	25.0
	4.5000	0.1000	638.7	-31.5	-314.37	233	25.0
	4.6000	0.1000	601.1	-37.6	-535.70	238	25.0
	4.7000	0.1000	552.1	-49.0	-829.73	244	25.0
5054	4.8000	0.1000	481.3	-70.8	-1056.22	250	25.0
EQP1 (9)	4.887564	NaN	361.3	NaN	-1117.76	NaN	NaN
(-)	4.9000	0.1000	344.3	-137.0	-1112.40	266	25.0
	5.0000	0.1000	182.1	-162.2	-975.07	281	25.0
	5.1000	0.1000	106.9	-75.2	-682.88	292	25.0
	5.2000 5.3000	0.1000 0.1000	87.9 85.8	-19.0	-327.71 -36.93	300	25.0 25.0
	5.4000	0.1000	85.5	-2.1 -0.3	-36.93 77.29	305 310	25.0
	5.5000	0.1000	85.9	0.4	46.68	315	25.0
	5.6000	0.1000	87.8	1.9	15.12	321	25.0
	5.7000	0.1000	87.8	0.0	3.84	326	25.0
	5.8000	0.1000	88.5	0.7	2.46	331	25.0
	5.9000	0.1000	86.0	-2.5	3.50	337	25.0
	6.0000 6.1000	0.1000 0.1000	88.2 88.5	2.2 0.3	1.01 3.00	342 347	25.0 25.0
	6.2000	0.1000	89.6	1.1	1.37	352	25.0
	6.3000	0.1000	89.1	-0.5	1.78	358	25.0
	6.4000	0.1000	86.7	-2.4	-3.60	363	25.0
	6.5000	0.1000	89.7	3.0	-0.71	368	25.0
	6.6000	0.1000	87.9	-1.8	1.29	374	25.0
	6.7000 6.8000	0.1000 0.1000	89.5 87.5	1.6 -2.0	3.49 9.05	379 384	25.0 25.0
	6.9000	0.1000	91.0	-2.0 3.5	9.05 4.27	389	25.0 25.0
	0.0000	0.1000	01.0	0.0	7.61	555	20.0

CPC 8/28/2012 9:20:35 AM CPC

8/28/2012 8:49:48 AM

Volume	Increment	Signal	Change	1st deriv.	Time	Temperature
mL	mL	mV	mV	mV/mL	s	оС
7.0000	0.1000	90.0	-1.0	6.20	395	25.0
7.1000	0.1000	91.2	1.2	1.53	400	25.0
7.2000	0.1000	93.3	2.1	1.52	406	25.0
7.3000	0.1000	87.7	-5.6	-2.15	412	25.0
7.4000	0.1000	92.3	4.6	-0.72	417	25.0
7.5000	0.1000	90.1	-2.2	0.54	422	25.0
7.6000	0.1000	92.1	2.0	2.20	427	25.0
7.7000	0.1000	90.2	-1.9	1.53	433	25.0
7.8000	0.1000	91.3	1.1	-1.72	438	25.0
7.9000	0.1000	92.1	0.8	1.93	443	25.0
8.0000	0.1000	90.4	-1.7	0.06	448	25.0
8.1000	0.1000	90.8	0.4	1.90	454	25.0
8.2000	0.1000	92.9	2.1	3.57	459	25.0
8.3000	0.1000	91.5	-1.4	5.52	464	25.0
8.4000	0.1000	91.9	0.4	6.04	470	25.0
8.5000	0.1000	93.5	1.6	2.53	475	25.0
8.6000	0.1000	94.6	1.1	1.15	481	25.0
8.7000	0.1000	93.0	-1.6	4.20	486	25.0
8.8000	0.1000	93.7	0.7	5.77	491	25.0
8.9000	0.1000	93.7	0.0	8.25	496	25.0
9.0000	0.1000	95.7 95.5	1.8	6.87	502	25.0
9.1000	0.1000	97.8	2.3	10.98	508	25.0
9.2000	0.1000	97.7	-0.1	7.21	513	25.0
9.3000	0.1000	97.1	-0.6	5.32	519	25.0
9.4000	0.1000	96.6	-0.6 -0.5	1.82	524	25.0
9.5000	0.1000	101.7	-0.5 5.1	0.81	530	25.0
9.6000	0.1000	97.3	-4.4		535	25.0 25.0
		97.3 99.5	-4.4 2.2	3.59		25.0 25.0
9.7000	0.1000			NaN	541 546	
9.8000	0.1000	98.9	-0.6	NaN	546	25.0
9.9000	0.1000	100.8	1.9	NaN	552	25.0
10.0000	0.1000	103.9	3.1	NaN	558	25.0
10.0000	0.0000	102.5	-1.4	NaN	565	25.0

### **E - V curve EQP titration [1]** Sample 1/6

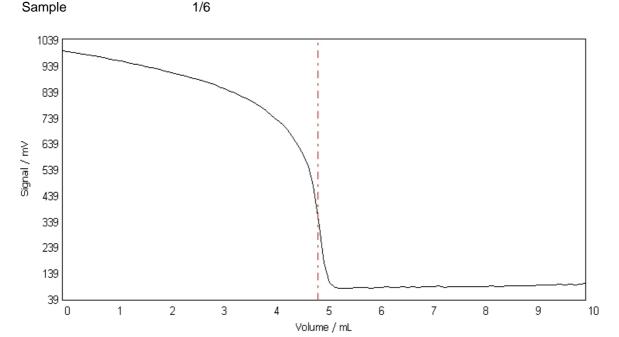


Method: CPC CPC 8/28/2012 8:49:48 AM

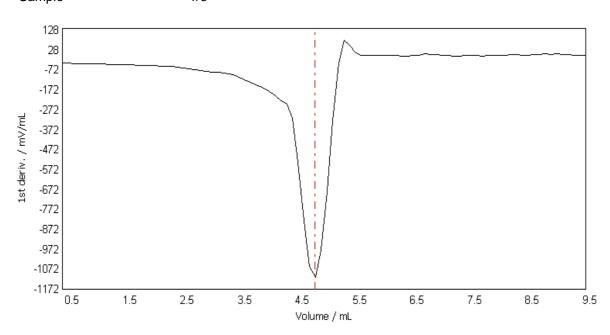
Start time: 8/28/2012 9:20:35

ΑM

### E - V curve EQP titration [1]



#### dE/dV - V curve EQP titration [1] Sample 1/6



#### Raw data

#### Sample

No. 2/6

Standard SODIUM DODECYL SULFATE

Type of standard liquid

Comment

Titration stand Rondolino TTL 1
Fixed volume m = 1.0 mLDensity d = 1 g/mLCorrection factor f = 1.0

Method: CPC CPC 8/28/2012 8:49:48 AM

Start time: 8/28/2012 9:20:35

ΑM

Concentration c = 0.04855 mol/LTemperature T = 25.0 oC

Sample start 8/28/2012 9:31:51 AM Sample end 8/28/2012 9:42:58 AM

Dispense (normal) [1]

Titrant SDS cDi = 0.04855 mol/L TITERDi = 1.0

Disp. volume VENDDi = 1.0 mL

Disp. amount QENDDi = 0.048550 mmol

Time 0:06 min

**EQP** titration [1]

Titrant CPC c = 0.01 mol/L TITER = 1.03808

Sensor DP5

Start potential EST = 999.6 mV

No. of EQPs and cand. nEQ = 1

Consumption EQP1 VEQ1 = 4.891603 mL (9)

Q1 = 0.050779 mmol (9)

EEQ1 = 358.1 mV (9) EHNV1 = 896.1 mV VEX = 5.108397 mL

QEX = 0.053029 mmol End VEND = 10.0000 mL

QEND = 0.103808 mmol

Termination at  $\begin{array}{c} \text{Max vol} \\ \text{Time} \\ \end{array}$ 

Calculation

**Excess** 

Result R1 = 0.99252 -- Titer Formula R1=m/(VEQ\*c\*C)

Constant 1/(cst\*z)

C = 20.597322

Molar mass M[SODIUM DODECYL SULFATE] = 288.38 g/mol

Equivalent number z[SODIUM DODECYL SULFATE] = 1

Duration tUSE = 10:34 min

Measured values EQP titration [1]

Titrant CPC c = 0.01 mol/L TITER = 1.03808

Sensor DP5 Sample 2/6

Volu ml		Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
0.0	0000	NaN	999.6	NaN	NaN	0	25.0
0.	1000	0.1000	997.3	-2.3	NaN	5	25.0
0.2	2000	0.1000	994.2	-3.1	NaN	10	25.0
0.3	3000	0.1000	991.0	-3.2	NaN	15	25.0
0.4	4000	0.1000	987.5	-3.5	NaN	20	25.0
0.9	5000	0.1000	983.9	-3.6	-36.98	25	25.0
0.0	0000	0.1000	979.9	-4.0	-37.13	30	25.0
0.7	7000	0.1000	976.3	-3.6	-37.19	36	25.0
0.0	3000	0.1000	972.5	-3.8	-37.50	41	25.0
0.9	9000	0.1000	969.2	-3.3	-38.72	46	25.0
1.0	0000	0.1000	964.9	-4.3	-39.44	51	25.0
1.1	1000	0.1000	961.0	-3.9	-40.93	56	25.0
1.2	2000	0.1000	956.6	-4.4	-42.71	61	25.0
1.3	3000	0.1000	952.3	-4.3	-43.56	66	25.0
1.4	4000	0.1000	948.5	-3.8	-43.63	71	25.0
1.5	5000	0.1000	943.5	-5.0	-44.12	76	25.0
1.6	6000	0.1000	938.9	-4.6	-44.03	81	25.0
1.5	7000	0.1000	935.0	-3.9	-44.54	86	25.0
1.8	3000	0.1000	930.3	-4.7	-46.06	91	25.0
1.9	9000	0.1000	925.7	-4.6	-47.77	96	25.0
2.0	0000	0.1000	920.9	-4.8	-51.83	102	25.0

CPC 8/28/2012 9:20:35 AM CPC

8/28/2012 8:49:48 AM

	Volume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
	2.1000	0.1000	915.5	-5.4	-53.29	107	25.0
	2.2000	0.1000	909.7	-5.4 -5.8	-55.35	112	25.0
	2.3000	0.1000	904.3	-5.4	-56.57	117	25.0
	2.4000	0.1000	898.3	-6.0	-57.59	122	25.0
	2.5000	0.1000	893.6	-4.7	-59.91	127	25.0
	2.6000	0.1000	886.1	-4.7 -7.5	-61.39	132	25.0
	2.7000	0.1000	880.8	-7.5 -5.3	-64.68	138	25.0
						143	
	2.8000	0.1000	873.7	-7.1	-67.14	143	25.0
	2.9000	0.1000	866.6	-7.1	-69.04		25.0
	3.0000	0.1000	860.5	-6.1	-71.94	153	25.0
	3.1000	0.1000	851.9	-8.6	-78.73	158	25.0
	3.2000	0.1000	844.8	-7.1	-83.00	164	25.0
	3.3000	0.1000	836.2	-8.6	-89.76	169	25.0
	3.4000	0.1000	825.8	-10.4	-97.44	174	25.0
	3.5000	0.1000	815.9	-9.9	-104.09	180	25.0
	3.6000	0.1000	806.2	-9.7	-112.20	185	25.0
	3.7000	0.1000	793.5	-12.7	-120.67	190	25.0
	3.8000	0.1000	780.7	-12.8	-136.07	195	25.0
	3.9000	0.1000	767.3	-13.4	-147.73	200	25.0
	4.0000	0.1000	751.6	-15.7	-163.03	206	25.0
	4.1000	0.1000	733.2	-18.4	-179.22	211	25.0
	4.2000	0.1000	712.7	-20.5	-206.67	216	25.0
	4.3000	0.1000	694.8	-17.9	-239.09	222	25.0
	4.4000	0.1000	665.0	-29.8	-255.55	228	25.0
	4.5000	0.1000	634.6	-30.4	-317.05	233	25.0
	4.6000	0.1000	592.9	-41.7	-529.28	241	25.0
	4.7000	0.1000	545.7	-47.2	-814.60	248	25.0
	4.8000	0.1000	480.0	-65.7	-1031.73	253	25.0
EQP1	4.891603	NaN	358.1	NaN	-1102.07	NaN	NaN
9)							
	4.9000	0.1000	346.9	-133.1	-1097.50	268	25.0
	5.0000	0.1000	183.3	-163.6	-971.70	283	25.0
	5.1000	0.1000	107.8	-75.5	-691.74	294	25.0
	5.2000	0.1000	87.3	-20.5	-338.03	302	25.0
	5.3000	0.1000	82.0	-5.3	-43.67	308	25.0
	5.4000	0.1000	83.2	1.2	73.42	313	25.0
	5.5000	0.1000	85.9	2.7	46.97	318	25.0
	5.6000	0.1000	86.8	0.9	18.81	324	25.0
	5.7000	0.1000	84.3	-2.5	4.47	330	25.0
	5.8000	0.1000	85.7	1.4	2.01	335	25.0
	5.9000	0.1000	86.6	0.9	2.05	341	25.0
	6.0000	0.1000	86.5	-0.1	3.87	346	25.0
	6.1000	0.1000	85.5	-1.0	1.32	351	25.0
	6.2000	0.1000	89.0	3.5	-3.95	357	25.0
	6.3000	0.1000	85.3	-3.7	-5.20	362	25.0
	6.4000	0.1000	85.8	0.5	-3.82	367	25.0
	6.5000	0.1000	84.5	-1.3	-1.97	373	25.0
	6.6000	0.1000	85.2	0.7	0.25	378	25.0
	6.7000	0.1000	85.5	0.3	3.34	383	25.0
	6.8000	0.1000	86.4		-0.75	388	25.0 25.0
				0.9			
	6.9000	0.1000	85.9	-0.5	0.41	394	25.0
	7.0000	0.1000	85.4	-0.5	-1.94	399	25.0
	7.1000	0.1000	84.6	-0.8	2.08	405	25.0
	7.2000	0.1000	85.4	0.8	1.92	410	25.0

CPC 8/28/2012 9:20:35

CPC

8/28/2012 8:49:48 AM

AM AM

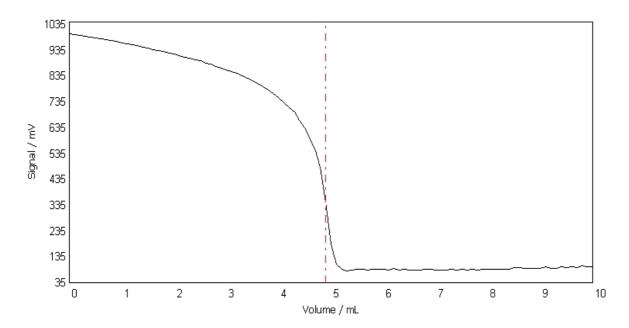
Volume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
7.3000	0.1000	87.1	1.7	3.84	415	25.0
7.4000	0.1000	85.5	-1.6	0.07	421	25.0
7.5000	0.1000	88.0	2.5	-0.52	427	25.0
7.6000	0.1000	84.5	-3.5	-0.74	432	25.0
7.7000	0.1000	86.7	2.2	1.05	437	25.0
7.8000	0.1000	84.8	-1.9	3.28	442	25.0
7.9000	0.1000	88.3	3.5	4.87	447	25.0
8.0000	0.1000	87.2	-1.1	2.38	452	25.0
8.1000	0.1000	87.3	0.1	0.46	457	25.0
8.2000	0.1000	87.6	0.3	6.84	462	25.0
8.3000	0.1000	88.4	0.8	8.76	468	25.0
8.4000	0.1000	86.4	-2.0	10.38	474	25.0
8.5000	0.1000	92.5	6.1	6.09	479	25.0
8.6000	0.1000	92.8	0.3	-0.95	484	25.0
8.7000	0.1000	90.0	-2.8	1.58	489	25.0
8.8000	0.1000	88.9	-1.1	1.09	494	25.0
8.9000	0.1000	89.7	0.8	-2.42	500	25.0
9.0000	0.1000	90.4	0.7	9.69	505	25.0
9.1000	0.1000	95.7	5.3	10.91	511	25.0
9.2000	0.1000	90.6	-5.1	8.15	516	25.0
9.3000	0.1000	92.0	1.4	2.06	521	25.0
9.4000	0.1000	97.2	5.2	5.79	528	25.0
9.5000	0.1000	92.5	-4.7	8.17	533	25.0
9.6000	0.1000	95.3	2.8	12.35	538	25.0

CPC 8/28/2012 9:20:35 AM CPC

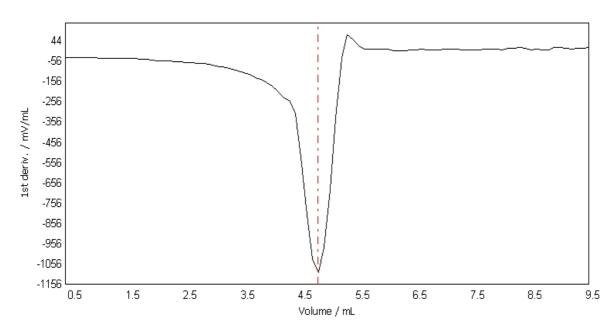
8/28/2012 8:49:48 AM

Volume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
 9.7000	0.1000	95.0	-0.3	NaN	543	25.0
9.8000	0.1000	100.4	5.4	NaN	548	25.0
9.9000	0.1000	96.7	-3.7	NaN	554	25.0
10.0000	0.1000	97.9	1.2	NaN	561	25.0
10.0000	0.0000	103.5	5.6	NaN	566	25.0

### E - V curve EQP titration [1] Sample 2/6







#### Raw data

#### Sample

TTLER TOLEDO T90 3.1.4 Serial No. B201599511

**CPC** 

Start time: 8/28/2012 9:20:35

ΑM

**CPC** 

No. 3/6

Standard SODIUM DODECYL SULFATE

Type of standard liquid

Comment

Method:

Titration stand Rondolino TTL 1
Fixed volume m = 1.0 mLDensity d = 1 g/mLCorrection factor f = 1.0

Concentration c = 0.04855 mol/LTemperature T = 25.0 oC

Sample start 8/28/2012 9:42:58 AM Sample end 8/28/2012 9:54:02 AM

Dispense (normal) [1]

Titrant SDS cDi = 0.04855 mol/L TITERDi = 1.0

Disp. volume VENDDi = 1.0 mL

Disp. amount QENDDi = 0.048550 mmol

Time 0:07 min

**EQP** titration [1]

Titrant CPC c = 0.01 mol/L TITER = 1.03808

Sensor DP5

Start potential EST = 998.1 mV

No. of EQPs and cand. nEQ = 1

Consumption EQP1 VEQ1 = 4.885981 mL (9)

Q1 = 0.050720 mmol (9) EEQ1 = 360.2 mV (9) EHNV1 = 895.9 mV VEX = 5.114019 mL

8/28/2012 8:49:48 AM

Excess VEX = 5.114019 mL QEX = 0.053088 mmol

VEND = 10.0000 mL QEND = 0.103808 mmol

Termination at Max vol Time t = 9:45 min

Calculation

End

Result R1 = 0.99366 -- Titer Formula R1=m/(VEQ\*c\*C)

Constant 1/(cst\*z)

C = 20.597322

Molar mass M[SODIUM DODECYL SULFATE] = 288.38 g/mol

Equivalent number z[SODIUM DODECYL SULFATE] = 1

Duration tUSE = 10:31 min

Measured values EQP titration [1]

Titrant CPC c = 0.01 mol/L TITER = 1.03808

Sensor DP5 Sample 3/6

Volume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
0.0000	NaN	998.1	NaN	NaN	0	25.0
0.1000	0.1000	995.5	-2.6	NaN	5	25.0
0.2000	0.1000	992.7	-2.8	NaN	10	25.0
0.3000	0.1000	990.0	-2.7	NaN	15	25.0
0.4000	0.1000	985.9	-4.1	NaN	20	25.0
0.5000	0.1000	982.6	-3.3	-35.94	25	25.0
0.6000	0.1000	979.0	-3.6	-36.73	30	25.0
0.7000	0.1000	975.6	-3.4	-36.76	36	25.0
0.8000	0.1000	971.4	-4.2	-37.36	41	25.0
0.9000	0.1000	967.9	-3.5	-39.21	46	25.0
1.0000	0.1000	964.0	-3.9	-40.09	51	25.0

LabX 3.1.1 / admin Page 10 of 22 8/28/2012 4:46:42 PM

**CPC** 

**CPC** 

8/28/2012 8:49:48 AM

8/28/2012 9:20:35 AM

Volume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
1.1000	0.1000	960.0	-4.0	-41.28	56	25.0
1.2000	0.1000	955.4	-4.6	-41.34	61	25.0
1.3000	0.1000	951.4	-4.0	-42.68	66	25.0
1.4000	0.1000	947.3	-4.1	-42.97	71	25.0
1.5000	0.1000	942.8	-4.5	-43.51	76	25.0
1.6000	0.1000	938.8	-4.0	-43.97	81	25.0
1.7000	0.1000	933.6	-5.2	-45.91	86	25.0
1.8000	0.1000	929.5	-4.1	-46.90	91	25.0
1.9000	0.1000	924.7	-4.8	-48.09	96	25.0
2.0000	0.1000	919.9	-4.8	-48.52	102	25.0
2.1000	0.1000	914.4	-5.5	-50.65	106	25.0
2.2000	0.1000	909.8	-4.6	-53.51	112	25.0
2.3000	0.1000	904.3	-5.5	-56.03	117	25.0
2.4000	0.1000	899.0	-5.3	-57.68	122	25.0
2.5000	0.1000	891.9	-7.1	-59.22	127	25.0
2.6000	0.1000	886.6	-5.3	-60.97	132	25.0
2.7000	0.1000	880.2	-6.4	-61.65	137	25.0
2.8000	0.1000	874.6	-5.6	-64.03	142	25.0
2.9000	0.1000	867.5	-7.1	-68.94	148	25.0
3.0000	0.1000	860.5	-7.0	-74.50	153	25.0
3.1000	0.1000	853.0	-7.5	-78.37	158	25.0
3.2000	0.1000	844.3	-8.7	-84.31	163	25.0
3.3000	0.1000	835.3	-9.0	-90.44	168	25.0

CPC 8/28/2012 9:20:35 AM CPC

8/28/2012 8:49:48 AM

	Volume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperatur oC
	3.4000	0.1000	827.3	-8.0	-96.61	173	25.0
	3.5000	0.1000	816.9	-10.4	-102.29	178	25.0
	3.6000	0.1000	805.2	-11.7	-110.42	183	25.0
	3.7000	0.1000	794.0	-11.2	-119.19	189	25.0
	3.8000	0.1000	782.4	-11.6	-131.71	194	25.0
	3.9000	0.1000	768.4	-14.0	-145.13	199	25.0
	4.0000	0.1000	752.3	-16.1	-164.66	204	25.0
	4.1000	0.1000	735.8	-16.5	-180.77	209	25.0
	4.2000	0.1000	714.5	-21.3	-205.32	214	25.0
	4.3000	0.1000	693.0	-21.5	-235.64	219	25.0
	4.4000	0.1000	666.8	-26.2	-250.43	224	25.0
	4.5000	0.1000	638.7	-28.1	-321.14	230	25.0
	4.6000	0.1000	594.5	-44.2	-536.65	235	25.0
	4.7000	0.1000	546.6	-47.9	-827.46	243	25.0
	4.8000	0.1000	479.7	-66.9	-1045.11	250	25.0
QP1 9)	4.885981	NaN	360.2	NaN	-1109.53	NaN	NaN
9)	4.9000	0.1000	340.7	-139.0	-1103.68	265	25.0
	5.0000	0.1000	183.0	-157.7	-963.24	280	25.0
	5.1000	0.1000	106.5	-76.5	-676.67	292	25.0
	5.2000	0.1000	88.8	-76.5 -17.7	-324.55	299	25.0
	5.3000	0.1000	83.1	-5.7	-35.19	306	25.0
	5.4000	0.1000	88.8	5.7	78.84	311	25.0
	5.5000	0.1000	87.6	-1.2	57.44	316	25.0
	5.6000	0.1000	87.8	0.2	21.80	321	25.0
	5.7000	0.1000	89.6	1.8	7.43	327	25.0
	5.8000	0.1000	93.5	3.9	1.17	332	25.0
	5.9000	0.1000	90.5	-3.0	-0.83	338	25.0
	6.0000	0.1000	87.0	-3.5	-5.67	343	25.0
	6.1000	0.1000	90.3	3.3	-6.69	348	25.0
	6.2000	0.1000	90.4	0.1	-4.39	353	25.0
	6.3000	0.1000	87.0	-3.4	1.16	359	25.0
	6.4000	0.1000	89.0	2.0	-2.86	364	25.0
	6.5000	0.1000	88.5	-0.5	-6.83	369	25.0
	6.6000	0.1000	87.7	-0.8	-2.85	374	25.0
	6.7000	0.1000	88.0	0.3	-1.96	379	25.0
	6.8000	0.1000	85.9	-2.1	-1.58	384	25.0
	6.9000	0.1000	87.2	1.3	3.01	390	25.0
	7.0000	0.1000	88.1	0.9	2.64	395	25.0
	7.1000	0.1000	87.6	-0.5	0.55	400	25.0
	7.2000	0.1000	88.8	1.2	1.68	406	25.0
	7.3000	0.1000	87.8	-1.0	-1.84	411	25.0
	7.4000	0.1000	86.6	-1.2	0.69	416	25.0
	7.5000	0.1000	87.8	1.2	1.76	422	25.0
	7.6000	0.1000	89.5	1.7	3.16	427	25.0
	7.7000	0.1000	87.4	-2.1	5.23	432	25.0
	7.8000	0.1000	89.9	2.5	4.47	438	25.0
	7.9000	0.1000	88.6	-1.3	1.88	443	25.0
	8.0000	0.1000	90.2	1.6	1.71	448	25.0
	8.1000	0.1000	90.1	-0.1	6.46	454	25.0
	8.2000	0.1000	90.2	0.1	3.86	459	25.0
	8.3000	0.1000	90.1	-0.1	6.56	464	25.0
	8.4000	0.1000	91.7	1.6	3.50	469	25.0
	8.5000	0.1000	93.8	2.1	3.29	475	25.0
	8.6000	0.1000	90.4	-3.4	-2.35	480	25.0
	8.7000	0.1000	93.0	2.6	0.82	485	25.0
	8.8000	0.1000	91.0	-2.0	2.66	490	25.0
	8.9000	0.1000	92.5	1.5	13.06	496	25.0
	9.0000	0.1000	91.9	-0.6	13.08	501	25.0
	9.1000	0.1000	98.1	6.2	6.76	506	25.0
	9.2000	0.1000	95.4	-2.7	8.22	512	25.0
	9.3000	0.1000	98.8	3.4	1.54	517	25.0 25.0
	9.4000	0.1000	98.8	-6.3	-0.66	522	25.0 25.0
	9.5000	0.1000	92.5 96.6	-6.3 4.1	1.36	522 528	25.0 25.0
	9.5000 9.6000	0.1000	96.6 99.0	4.1 2.4	8.41	528 534	25.0 25.0
	9.6000 9.7000	0.1000	99.0 95.7		8.41 NaN		25.0 25.0
	9.8000	0.1000	95.7 98.7	-3.3 3.0	NaN NaN	540 545	25.0 25.0
	9 OUUU	U. TUUU	30.7	3.0	ivalv	545	Z0.U

CPC 8/28/2012 9:20:35

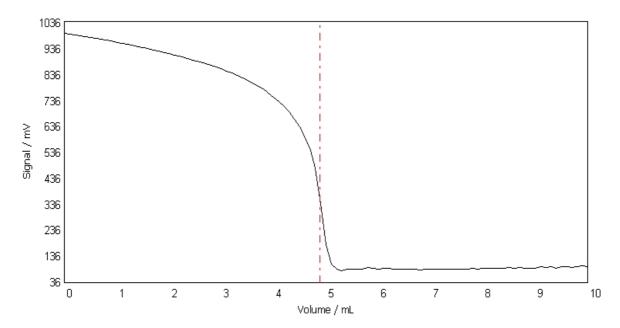
**AM** 

CPC

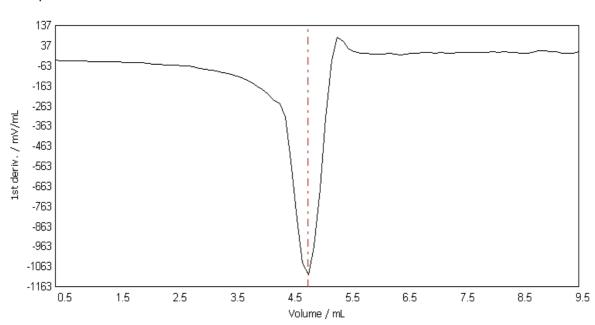
8/28/2012 8:49:48 AM

Volume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
 10.0000	0.1000	98.4	-1.5	NaN	556	25.0
10.0000	0.0000	99.0	0.6	NaN	562	25.0









#### Raw data

#### Sample

No. Standard 4/6 SODIUM DODECYL SULFATE

Type of standard liquid

METTLER TOLEDO T90 3.1.4 T90 GN / Excellence Titrator

Serial No. B201599511

8/28/2012 8:49:48 AM

**CPC** Method:

Start time: 8/28/2012 9:20:35

AM

Comment

Rondolino TTL 1 Titration stand Fixed volume  $m = 1.0 \, mL$ Density d = 1 g/mLCorrection factor f = 1.0

Concentration c = 0.04855 mol/LTemperature T = 25.0 oC

Sample start 8/28/2012 9:54:03 AM Sample end 8/28/2012 10:05:08 AM

Dispense (normal) [1]

Titrant SDS cDi = 0.04855 mol/L TITERDi = 1.0

**CPC** 

Disp. volume VENDDi = 1.0 mL

Disp. amount QENDDi = 0.048550 mmol

Time 0:07 min

**EQP** titration [1]

End

Titrant CPC c = 0.01 mol/L TITER = 1.03808

Sensor DP5

Start potential  $EST = 995.8 \, mV$ 

No. of EQPs and cand. nEQ = 1

Consumption EQP1  $VEQ1 = 4.889327 \, mL(9)$ 

Q1 = 0.050755 mmol (9)

EEQ1 = 356.9 mV (9)EHNV1 = 894.5 mV

**Excess** VEX = 5.110673 mL

QEX = 0.053053 mmolVEND = 10.0000 mL

QEND = 0.103808 mmol

Termination at Max vol Time t = 9:43 min

Serial No. B201599511

Method: CPC CPC 8/28/2012 8:49:48 AM

Start time: 8/28/2012 9:20:35

AM

Calculation

Result R1 = 0.99298 -- Titer Formula R1=m/(VEQ\*c\*C)

Constant 1/(cst\*z)

C = 20.597322

Molar mass M[SODIUM DODECYL SULFATE] = 288.38 g/mol

Equivalent number z[SODIUM DODECYL SULFATE] = 1

Duration tUSE = 10:30 min

Measured values EQP titration [1]

Titrant CPC c = 0.01 mol/L TITER = 1.03808

Sensor DP5 Sample 4/6

	lume nL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
(	0.0000	NaN	995.8	NaN	NaN	0	25.0
(	0.1000	0.1000	993.5	-2.3	NaN	5	25.0
(	.2000	0.1000	990.5	-3.0	NaN	10	25.0
(	0.3000	0.1000	987.3	-3.2	NaN	15	25.0
(	.4000	0.1000	984.2	-3.1	NaN	20	25.0
(	0.5000	0.1000	980.0	-4.2	-37.65	25	25.0
(	0.6000	0.1000	976.4	-3.6	-37.94	30	25.0
(	.7000	0.1000	972.7	-3.7	-38.41	36	25.0
(	0.8000	0.1000	968.4	-4.3	-37.94	41	25.0
(	0.9000	0.1000	965.2	-3.2	-38.08	46	25.0
1	.0000	0.1000	961.3	-3.9	-38.63	51	25.0
1	.1000	0.1000	957.1	-4.2	-38.52	56	25.0
1	.2000	0.1000	953.5	-3.6	-39.62	61	25.0
1	.3000	0.1000	949.0	-4.5	-42.17	66	25.0
1	.4000	0.1000	945.4	-3.6	-43.65	71	25.0
1	.5000	0.1000	940.9	-4.5	-45.46	76	25.0
1	.6000	0.1000	935.7	-5.2	-47.08	81	25.0
1	.7000	0.1000	930.9	-4.8	-46.66	87	25.0
1	.8000	0.1000	926.6	-4.3	-46.90	92	25.0
1	.9000	0.1000	921.8	-4.8	-47.66	97	25.0
2	2.0000	0.1000	917.1	-4.7	-48.91	102	25.0
2	2.1000	0.1000	912.6	-4.5	-49.86	107	25.0
2	2.2000	0.1000	906.7	-5.9	-51.29	112	25.0
2	2.3000	0.1000	901.2	-5.5	-52.20	117	25.0
2	2.4000	0.1000	896.8	-4.4	-53.25	122	25.0

CPC 8/28/2012 9:20:35 AM **CPC** 

8/28/2012 8:49:48 AM

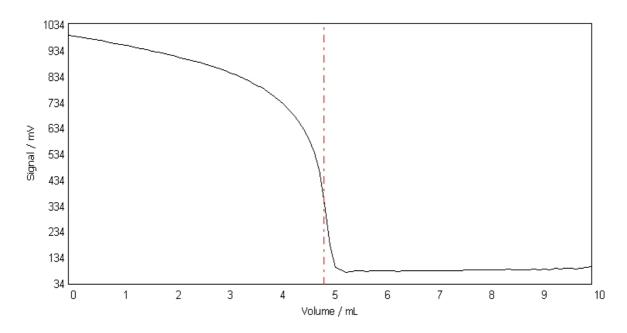
	Volume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
	2.5000	0.1000	891.6	-5.2	-56.05	127	25.0
	2.6000	0.1000	885.1	-6.5	-58.58	132	25.0
	2.7000	0.1000	879.4	-5.7	-63.25	138	25.0
	2.8000	0.1000	872.9	-6.5	-68.14	143	25.0
	2.9000	0.1000	865.3	-7.6	-71.85	148	25.0
	3.0000	0.1000	858.9	-6.4	-74.98	153	25.0
	3.1000	0.1000	850.5	-8.4	-78.57	158	25.0
	3.2000	0.1000	842.2	-8.3	-84.46	163	25.0
	3.3000	0.1000	833.9	-8.3	-89.28	168	25.0
	3.4000	0.1000	825.2	-8.7	-96.38	173	25.0
	3.5000	0.1000	814.8	-10.4	-100.24	178	25.0
	3.6000	0.1000	802.9	-11.9	-112.57	183	25.0
	3.7000	0.1000	793.3	-9.6	-121.06	189	25.0
	3.8000	0.1000	779.6	-13.7	-132.32	194	25.0
	3.9000	0.1000	766.8	-12.8	-147.84	200	25.0
	4.0000	0.1000	747.8	-19.0	-165.21	206	25.0
	4.1000	0.1000	734.5	-13.3	-186.42	211	25.0
	4.2000	0.1000	711.8	-22.7	-207.87	216	25.0
	4.3000	0.1000	688.9	-22.9	-238.75	221	25.0
	4.4000	0.1000	664.0	-24.9	-257.06	226	25.0
	4.5000	0.1000	631.5	-32.5	-324.76	231	25.0
	4.6000	0.1000	593.1	-38.4	-525.09	237	25.0
	4.7000	0.1000	541.8	-51.3	-821.31	242	25.0
	4.8000	0.1000	474.6	-67.2	-1038.10	249	25.0
EQP1 (9)	4.889327	NaN	356.9	NaN	-1101.42	NaN	NaN
(3)	4.9000	0.1000	342.8	-131.8	-1096.05	264	25.0
	5.0000	0.1000	184.0	-158.8	-965.74	279	25.0
	5.1000	0.1000	98.5	-85.5	-678.42	293	25.0
	5.2000	0.1000	90.4	-8.1	-327.00	299	25.0
	5.3000	0.1000	80.7	-9.7	-39.43	306	25.0
	5.4000	0.1000	83.6	2.9	74.29	310	25.0
	5.5000	0.1000	86.5	2.9	47.51	316	25.0
	5.6000	0.1000	85.9	-0.6	10.61	321	25.0
	5.7000	0.1000	81.6	-4.3	8.93	327	25.0
	5.8000	0.1000	85.5	3.9	1.94	332	25.0
	5.9000	0.1000	87.0	1.5	1.88	338	25.0
	6.0000	0.1000	86.3	-0.7	0.76	343	25.0
	6.1000	0.1000	85.8	-0.5	-1.41	348	25.0
	6.2000	0.1000	85.3	-0.5	-6.93	353	25.0
	6.3000	0.1000	83.8	-1.5	-1.77	358	25.0
	6.4000	0.1000	84.5	0.7	1.39	363	25.0
	6.5000	0.1000	86.2	1.7	2.44	368	25.0
	6.6000	0.1000	84.7	-1.5	1.68	373	25.0
	6.7000	0.1000	86.3	1.6	2.00	379	25.0
	6.8000	0.1000	84.9	-1.4	0.27	384	25.0
	6.9000	0.1000	85.5	0.6	1.32	390	25.0
	7.0000	0.1000	85.5	0.0	2.51	395	25.0
	7.1000	0.1000	86.9	1.4	-0.42	400	25.0
	7.2000	0.1000	85.7	-1.2	0.33	405	25.0
	7.3000	0.1000	86.3	0.6	0.62	410	25.0
	7.4000	0.1000	85.7	-0.6	3.48	415	25.0
	7.5000	0.1000	85.6	-0.1	4.70	420	25.0
	7.6000	0.1000	87.7	2.1	6.13	426	25.0
	7.7000	0.1000	88.4	0.7	4.33	431	25.0
	7.8000	0.1000	88.4	0.0	5.31	436	25.0
	7.9000	0.1000	87.7	-0.7	0.74	441	25.0
		0.1000	88.5	0.8	1.34	446	
	8.0000						25.0
	8.1000	0.1000	88.9	0.4	4.33	452 457	25.0
	8.2000	0.1000	90.0	1.1	4.71	457	25.0
	8.3000	0.1000	87.9	-2.1	3.69	463	25.0
	8.4000	0.1000	91.7	3.8	0.34	468	25.0
	8.5000	0.1000	90.2	-1.5	3.48	473	25.0
	8.6000	0.1000	89.7	-0.5	2.79	479	25.0
	8.7000	0.1000	90.4	0.7	6.27	484	25.0
	8.8000	0.1000	90.7	0.3	0.93	489	25.0
	8.9000	0.1000	93.7	3.0	5.60	495	25.0
	9.0000	0.1000	90.7	-3.0	3.17	500	25.0
	9.1000	0.1000	93.6	2.9	2.74	505	25.0
	9.2000	0.1000	89.9	-3.7	6.40	512	25.0
	9.3000	0.1000	95.5	5.6	7.23	517	25.0
	9.4000	0.1000	93.0	-2.5	6.93	522	25.0

CPC 8/28/2012 9:20:35 AM **CPC** 

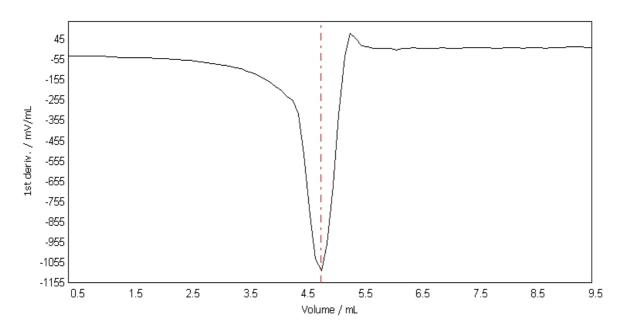
8/28/2012 8:49:48 AM

Volume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
9.6000	0.1000	96.4	0.8	5.09	533	25.0
9.7000	0.1000	94.1	-2.3	NaN	538	25.0
9.8000	0.1000	95.2	1.1	NaN	544	25.0
9.9000	0.1000	98.1	2.9	NaN	550	25.0
10.0000	0.1000	101.0	2.9	NaN	555	25.0
10.0000	0.0000	95.9	-5.1	NaN	561	25.0

### **E - V curve EQP titration [1]** Sample 4/6



#### dE/dV - V curve EQP titration [1] Sample 4/6



#### Raw data

TTLER TOLEDO T90 3.1.4 Serial No. B201599511

8/28/2012 8:49:48 AM

**CPC** 

Start time: 8/28/2012 9:20:35

ΑM

**CPC** 

Sample

Method:

No. 5/6

Standard SODIUM DODECYL SULFATE

Type of standard liquid

Comment

Titration stand Rondolino TTL 1
Fixed volume m = 1.0 mLDensity d = 1 g/mLCorrection factor f = 1.0

Concentration c = 0.04855 mol/LTemperature T = 25.0 oC

Sample start 8/28/2012 10:05:08 AM Sample end 8/28/2012 10:16:27 AM

Dispense (normal) [1]

Titrant SDS cDi = 0.04855 mol/L TITERDi = 1.0

Disp. volume VENDDi = 1.0 mL

Disp. amount QENDDi = 0.048550 mmol

Time 0:07 min

**EQP** titration [1]

Titrant CPC c = 0.01 mol/L TITER = 1.03808

Sensor DP5

Start potential EST = 992.9 mV

LabX 3.1.1 / admin Page 18 of 22 8/28/2012 4:46:42 PM

Method:

TTLER TOLEDO T90 3.1.4 Serial No. B201599511

Start time: 8/28/2012 9:20:35

ΑM

**CPC** 

No. of EQPs and cand. nEQ = 1

Consumption EQP1 VEQ1 = 4.879600 mL (9)

**CPC** 

Q1 = 0.050654 mmol (9)EEQ1 = 355.7 mV (9)

8/28/2012 8:49:48 AM

Excess EHNV1 = 885.6 mV VEX = 5.120400 mL

QEX = 0.053154 mmol VEND = 10.0000 mL QEND = 0.103808 mmol

Termination at  $\frac{\text{Max vol}}{\text{Time}}$   $\frac{\text{Max vol}}{\text{t} = 9:56 \text{ min}}$ 

Calculation

End

Result R1 = 0.99496 -- Titer Formula R1=m/(VEQ\*c\*C)

Constant 1/(cst\*z)

C = 20.597322

Molar mass M[SODIUM DODECYL SULFATE] = 288.38 g/mol

Equivalent number z[SODIUM DODECYL SULFATE] = 1

Duration tUSE = 10:41 min

Measured values EQP titration [1]

Titrant CPC c = 0.01 mol/L TITER = 1.03808

Sensor DP5 Sample 5/6

Volume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
0.0000	NaN	992.9	NaN	NaN	0	25.0
0.1000	0.1000	987.3	-5.6	NaN	5	25.0
0.2000	0.1000	986.4	-0.9	NaN	10	25.0
0.3000	0.1000	983.6	-2.8	NaN	15	25.0
0.4000	0.1000	980.1	-3.5	NaN	20	25.0
0.5000	0.1000	976.6	-3.5	-35.28	26	25.0
0.6000	0.1000	972.9	-3.7	-40.25	31	25.0
0.7000	0.1000	968.9	-4.0	-41.27	36	25.0
0.8000	0.1000	964.5	-4.4	-41.33	41	25.0
0.9000	0.1000	960.3	-4.2	-41.38	46	25.0
1.0000	0.1000	956.4	-3.9	-41.14	51	25.0
1.1000	0.1000	951.9	-4.5	-42.26	56	25.0
1.2000	0.1000	948.5	-3.4	-43.25	61	25.0
1.3000	0.1000	943.6	-4.9	-43.68	67	25.0
1.4000	0.1000	939.0	-4.6	-46.06	72	25.0
1.5000	0.1000	934.0	-5.0	-46.47	77	25.0
1.6000	0.1000	930.2	-3.8	-46.80	82	25.0
1.7000	0.1000	925.5	-4.7	-46.34	87	25.0
1.8000	0.1000	919.5	-6.0	-47.46	93	25.0
1.9000	0.1000	916.2	-3.3	-48.89	98	25.0
2.0000	0.1000	910.7	-5.5	-50.07	103	25.0
2.1000	0.1000	905.5	-5.2	-52.42	109	25.0
2.2000	0.1000	900.1	-5.4	-56.80	114	25.0
2.3000	0.1000	894.5	-5.6	-60.56	119	25.0
2.4000	0.1000	888.6	-5.9	-63.11	124	25.0
2.5000	0.1000	881.1	-7.5	-62.93	130	25.0
2.6000	0.1000	875.0	-6.1	-64.45	135	25.0
2.7000	0.1000	869.2	-5.8	-65.95	140	25.0
2.8000	0.1000	861.8	-7.4	-65.73	146	25.0
2.9000	0.1000	856.9	-4.9	-67.34	151	25.0
3.0000	0.1000	847.3	-9.6	-73.63	156	25.0
3.1000	0.1000	841.0	-6.3	-77.80	162	25.0
3.2000	0.1000	834.0	-7.0	-84.71	167	25.0
3.3000	0.1000	824.1	-9.9	-90.13	172	25.0
3.4000	0.1000	814.0	-10.1	-95.75	178	25.0
3.5000	0.1000	805.4	-8.6	-104.19	183	25.0
3.6000	0.1000	793.1	-12.3	-112.87	188	25.0

CPC 8/28/2012 9:20:35 AM CPC

8/28/2012 8:49:48 AM

	Volume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
	3.7000	0.1000	783.4	-9.7	-124.23	193	25.0
	3.8000	0.1000	768.9	-14.5	-137.77	193	25.0 25.0
	3.9000	0.1000	755.2	-13.7	-150.14	204	25.0
	4.0000	0.1000	737.7	-17.5	-165.79	209	25.0 25.0
	4.1000	0.1000	720.8	-16.9	-181.29	215	25.0 25.0
	4.2000	0.1000	702.6	-18.2	-202.78	213	25.0 25.0
			680.6			226	
	4.3000	0.1000		-22.0	-219.43		25.0
	4.4000	0.1000	653.1	-27.5	-251.95	231	25.0
	4.5000	0.1000	625.3	-27.8	-337.54	237	25.0
	4.6000	0.1000	584.2	-41.1	-554.43	242	25.0
	4.7000	0.1000	538.5	-45.7	-812.26	247	25.0
	4.8000	0.1000	451.9	-86.6	-1003.55	262	25.0
EQP1 (9)	4.879600	NaN	355.7	NaN	-1053.64	NaN	NaN
	4.9000	0.1000	331.1	-120.8	-1047.29	278	25.0
	5.0000	0.1000	184.2	-146.9	-910.63	293	25.0
	5.1000	0.1000	121.4	-62.8	-640.24	302	25.0
	5.2000	0.1000	93.1	-28.3	-312.13	310	25.0
	5.3000	0.1000	85.0	-8.1	-61.78	315	25.0
	5.4000	0.1000	86.4	1.4	50.19	320	25.0
	5.5000	0.1000	87.4	1.0	37.88	325	25.0
	5.6000	0.1000	90.1	2.7	20.96	330	25.0
	5.7000	0.1000	87.5	-2.6	6.45	336	25.0
	5.8000	0.1000	88.7	1.2	-1.20	341	25.0 25.0
	5.9000	0.1000	88.6	-0.1	-0.40	346	25.0 25.0
	6.0000	0.1000	87.1	-1.5	1.21	351	25.0
	6.1000	0.1000	89.9	2.8	4.13	357	25.0
	6.2000	0.1000	88.7	-1.2	3.21	362	25.0
	6.3000	0.1000	89.8	1.1	2.51	367	25.0
	6.4000	0.1000	89.4	-0.4	4.14	372	25.0
	6.5000	0.1000	90.0	0.6	1.94	377	25.0
	6.6000	0.1000	90.3	0.3	2.14	382	25.0
	6.7000	0.1000	89.8	-0.5	0.72	388	25.0
	6.8000	0.1000	92.1	2.3	-1.32	393	25.0
	6.9000	0.1000	89.1	-3.0	-2.10	398	25.0
	7.0000	0.1000	89.9	0.8	-0.71	403	25.0
	7.1000	0.1000	90.5	0.6	2.61	409	25.0
	7.2000	0.1000	89.3	-1.2	2.80	415	25.0
	7.3000	0.1000	91.5	2.2	7.60	420	25.0
	7.4000	0.1000	91.7	0.2	3.68	425	25.0
	7.5000	0.1000	92.3	0.6	2.71	430	25.0
	7.6000	0.1000	91.0	-1.3	0.00	436	25.0
	7.7000	0.1000	93.6	2.6	1.95	442	25.0
	7.8000	0.1000	90.8	-2.8	4.69	442	25.0
	7.9000	0.1000	92.8	2.0	6.19	453	25.0
	8.0000	0.1000	93.0	0.2	5.63	458 458	25.0 25.0
	8.1000	0.1000	96.2			456 464	25.0 25.0
			93.5	3.2	3.62		
	8.2000	0.1000		-2.7	7.67	469 475	25.0
	8.3000	0.1000	94.7	1.2	2.63	475	25.0
	8.4000	0.1000	94.4	-0.3	-1.32	480	25.0
	8.5000	0.1000	95.8	1.4	-3.08	485	25.0
	8.6000	0.1000	97.0	1.2	0.40	491	25.0
	8.7000	0.1000	92.7	-4.3	1.05	496	25.0
	8.8000	0.1000	93.5	0.8	3.75	501	25.0
	8.9000	0.1000	96.3	2.8	7.77	508	25.0
	9.0000	0.1000	97.6	1.3	11.75	513	25.0
	9.1000	0.1000	97.8	0.2	9.82	518	25.0
	9.2000	0.1000	97.8	0.0	4.12	524	25.0
	9.3000	0.1000	99.7	1.9	4.70	530	25.0
	9.4000	0.1000	98.9	-0.8	4.70	535	25.0
	9.5000	0.1000	98.6	-0.3	4.18	540	25.0
	9.6000	0.1000	101.4	2.8	4.15	546	25.0
	9.7000	0.1000	101.4		NaN	551	25.0 25.0
				0.1			
	9.8000	0.1000	99.7	-1.8	NaN	556	25.0
	9.9000	0.1000	101.8	2.1	NaN	562	25.0
	10.0000	0.1000 0.0000	103.2 101.8	1.4 -1.4	NaN NaN	567 573	25.0 25.0
	10.0000						

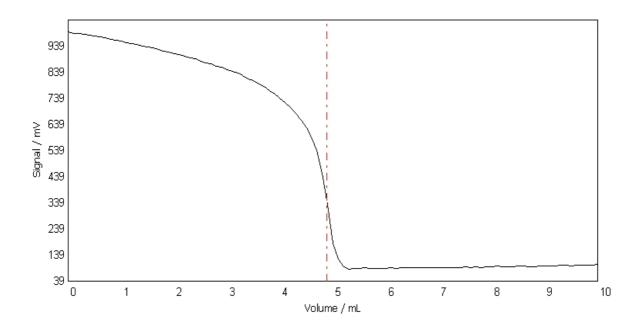
# **E - V curve EQP titration [1]** Sample 5/6

Method: CPC CPC 8/28/2012 8:49:48 AM

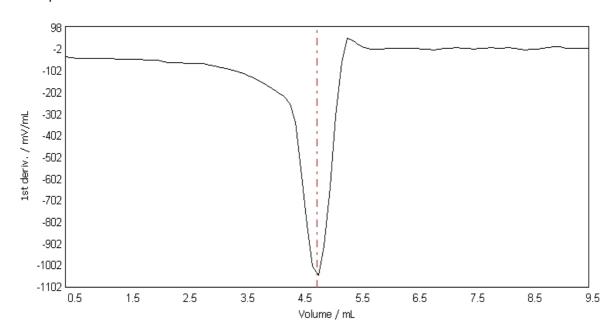
Start time: 8/28/2012 9:20:35

ΑM

### **E - V curve EQP titration [1]**Sample 5/6



### **dE/dV - V curve EQP titration [1]**Sample 5/6



#### Raw data

#### Sample

No. 6/6

Standard SODIUM DODECYL SULFATE

Type of standard liquid

Comment

Titration stand Rondolino TTL 1
Fixed volume m = 1.0 mLDensity d = 1 g/mLCorrection factor f = 1.0

Method:

TLER TOLEDO T90 3.1.4 Serial No. B201599511

**CPC** 

Start time: 8/28/2012 9:20:35

ΑM

**CPC** 

 $\begin{array}{ll} \text{Concentration} & \text{c} = 0.04855 \text{ mol/L} \\ \text{Temperature} & \text{T} = 25.0 \text{ oC} \\ \end{array}$ 

Sample start 8/28/2012 10:16:28 AM Sample end 8/28/2012 10:27:26 AM

Dispense (normal) [1]

Titrant SDS cDi = 0.04855 mol/L TITERDi = 1.0

Disp. volume VENDDi = 1.0 mL

Disp. amount QENDDi = 0.048550 mmol

Time 0:06 min

**EQP** titration [1]

Titrant CPC c = 0.01 mol/L TITER = 1.03808

Sensor DP5

Start potential EST = 991.0 mV

No. of EQPs and cand. nEQ = 1

Consumption EQP1 VEQ1 = 4.896134 mL (9)

Q1 = 0.050826 mmol (9)

8/28/2012 8:49:48 AM

EEQ1 = 357.4 mV (9) EHNV1 = 886.2 mV

Excess VEX = 5.103866 mL

QEX = 0.052982 mmol VEND = 10.0000 mL QEND = 0.103808 mmol

Termination at Max volTime t = 9:52 min

Calculation

End

Result R1 = 0.99160 -- Titer Formula R1=m/(VEQ\*c\*C)

Constant 1/(cst\*z)

C = 20.597322

Method: CPC CPC 8/28/2012 8:49:48 AM

Start time: 8/28/2012 9:20:35

ΑM

Molar mass M[SODIUM DODECYL SULFATE] = 288.38 g/mol

Equivalent number z[SODIUM DODECYL SULFATE] = 1

Duration tUSE = 10:37 min

Measured values EQP titration [1]

Titrant CPC c = 0.01 mol/L TITER = 1.03808

Sensor DP5 Sample 6/6

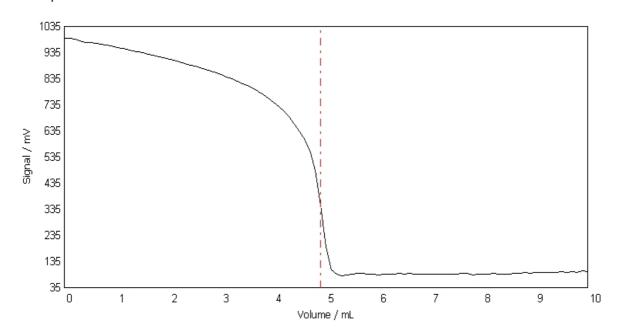
\	/olume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
	0.0000	NaN	991.0	NaN	NaN	0	25.0
	0.1000	0.1000	989.3	-1.7	NaN	5	25.0
	0.2000	0.1000	986.1	-3.2	NaN	10	25.0
	0.3000	0.1000	982.7	-3.4	NaN	15	25.0
	0.4000	0.1000	975.5	-7.2	NaN	21	25.0
	0.5000	0.1000	975.6	0.1	-35.22	26	25.0
	0.6000	0.1000	972.0	-3.6	-32.58	31	25.0
	0.7000	0.1000	967.7	-4.3	-33.78	36	25.0
	0.8000	0.1000	964.5	-3.2	-36.10	41	25.0
	0.9000	0.1000	960.9	-3.6	-42.82	46	25.0
	1.0000	0.1000	956.7	-4.2	-42.40	51	25.0
	1.1000	0.1000	951.5	-5.2	-43.00	56	25.0
	1.2000	0.1000	948.1	-3.4	-43.05	61	25.0
	1.3000	0.1000	942.7	-5.4	-42.20	66	25.0
	1.4000	0.1000	939.5	-3.2	-41.65	72	25.0
	1.5000	0.1000	935.4	-4.1	-43.11 45.04	77	25.0
	1.6000	0.1000	930.8	-4.6	-45.84	82	25.0
	1.7000	0.1000	925.8	-5.0	-48.16	87	25.0
	1.8000 1.9000	0.1000	921.1	-4.7	-50.54	92	25.0
	2.0000	0.1000	915.7	-5.4	-50.78	97	25.0
		0.1000	910.8	-4.9 5.4	-51.45	102	25.0
	2.1000 2.2000	0.1000	905.4	-5.4	-53.06 54.36	107	25.0
	2.2000	0.1000 0.1000	900.7 894.7	-4.7 -6.0	-54.36 -54.17	112 118	25.0 25.0
	2.4000	0.1000	889.0	-6.0 -5.7	-54.17 -56.54	122	25.0
	2.5000	0.1000	883.2	-5.7 -5.8	-57.45	128	25.0
	2.6000	0.1000	878.0	-5.2	-60.06	133	25.0
	2.7000	0.1000	872.1	-5.2 -5.9	-63.29	138	25.0
	2.8000	0.1000	864.4	-3.9 -7.7	-66.04	143	25.0
	2.9000	0.1000	858.8	-5.6	-68.82	148	25.0
	3.0000	0.1000	850.6	-8.2	-73.24	153	25.0
	3.1000	0.1000	843.5	-7.1	-77.64	158	25.0
	3.2000	0.1000	836.7	-6.8	-80.59	164	25.0
	3.3000	0.1000	827.3	-9.4	-87.75	169	25.0
	3.4000	0.1000	817.5	-9.8	-93.50	174	25.0
	3.5000	0.1000	808.6	-8.9	-98.95	179	25.0
	3.6000	0.1000	799.3	-9.3	-106.61	184	25.0
	3.7000	0.1000	786.1	-13.2	-116.49	189	25.0
	3.8000	0.1000	775.3	-10.8	-128.93	195	25.0
	3.9000	0.1000	762.5	-12.8	-143.58	200	25.0
	4.0000	0.1000	745.1	-17.4	-158.83	205	25.0
	4.1000	0.1000	728.8	-16.3	-180.34	210	25.0
	4.2000	0.1000	710.7	-18.1	-201.96	217	25.0
	4.3000	0.1000	688.2	-22.5	-221.22	222	25.0
	4.4000	0.1000	662.9	-25.3	-233.20	227	25.0
	4.5000	0.1000	632.3	-30.6	-295.62	233	25.0
	4.6000	0.1000	600.2	-32.1	-501.07	238	25.0
	4.7000	0.1000	552.3	-47.9	-800.02	244	25.0
	4.8000	0.1000	483.0	-69.3	-1039.41	250	25.0
EQP1 (9)	4.896134	NaN	357.4	NaN	-1120.06	NaN	NaN
• •	4.9000	0.1000	352.4	-130.6	-1116.77	266	25.0
	5.0000	0.1000	190.0	-162.4	-996.14	281	25.0
	5.1000	0.1000	102.3	-87.7	-705.63	295	25.0
	5.2000	0.1000	85.8	-16.5	-344.43	302	25.0
	5.3000	0.1000	81.4	-4.4	-38.66	308	25.0
	5.4000	0.1000	83.6	2.2	91.41	313	25.0
	5.5000	0.1000	87.6	4.0	67.28	318	25.0
	5.6000	0.1000	90.2	2.6	19.65	324	25.0
	5.7000	0.1000	89.8	-0.4	2.95	329	25.0
	5.8000	0.1000	88.2	-1.6	-10.19	335	25.0
	5.9000	0.1000	87.1	-1.1	-12.32	340	25.0
LabX 3.1.1 / admin			Pag	e 23 of 22			8/28/2012 4:46:42 PM

CPC 8/28/2012 9:20:35 AM CPC

8/28/2012 8:49:48 AM

	Volume mL	Increment mL	Signal mV	Change mV	1st deriv. mV/mL	Time s	Temperature oC
-	6.0000	0.1000	84.5	-2.6	-4.82	345	25.0
	6.1000	0.1000	87.3	2.8	-0.18	351	25.0
	6.2000	0.1000	85.3	-2.0	5.53	357	25.0
	6.3000	0.1000	87.8	2.5	4.90	362	25.0
	6.4000	0.1000	88.4	0.6	3.42	367	25.0
	6.5000	0.1000	85.9	-2.5	-0.92	372	25.0
	6.6000	0.1000	89.0	3.1	-1.11	378	25.0
	6.7000	0.1000	86.0	-3.0	-5.24	383	25.0
	6.8000	0.1000	87.4	1.4	-3.72	389	25.0
	6.9000	0.1000	86.1	-1.3	-0.63	394	25.0
	7.0000	0.1000	86.2	0.1	-1.50	399	25.0
	7.1000	0.1000	85.5	-0.7	-0.42	404	25.0
	7.2000	0.1000	86.9	1.4	-2.31	410	25.0
	7.3000	0.1000	87.4	0.5	5.89	415	25.0
	7.4000	0.1000	85.2	-2.2	3.94	421	25.0
	7.5000	0.1000	85.8	0.6	3.22	426	25.0
	7.6000	0.1000	88.5	2.7	2.79	432	25.0
	7.7000	0.1000	90.7	2.2	1.45	438	25.0
	7.8000	0.1000	84.7	-6.0	2.26	443	25.0
	7.9000	0.1000	88.2	3.5	0.02	448	25.0
	8.0000	0.1000	88.2	0.0	0.41	454	25.0
	8.1000	0.1000	87.4	-0.8	1.58	459	25.0
	8.2000	0.1000	90.0	2.6	3.24	464	25.0
	8.3000	0.1000	88.1	-1.9	-0.66	470	25.0
	8.4000	0.1000	88.0	-0.1	5.61	476	25.0
	8.5000	0.1000	88.1	0.1	6.67	481	25.0
	8.6000	0.1000	90.7	2.6	6.08	486	25.0
	8.7000	0.1000	91.2	0.5	9.18	491	25.0
	8.8000	0.1000	92.4	1.2	6.24	497	25.0
	8.9000	0.1000	90.6	-1.8	4.41	502	25.0
	9.0000	0.1000	92.0	1.4	1.68	508	25.0
	9.1000	0.1000	93.8	1.8	6.44	513	25.0
	9.2000	0.1000	92.8	-1.0	5.58	518	25.0
	9.3000	0.1000	93.8	1.0	6.73	524	25.0
	9.4000	0.1000	93.7	-0.1	1.40	530	25.0
	9.5000	0.1000	96.6	2.9	3.98	535	25.0
	9.6000	0.1000	93.4	-3.2	5.11	540	25.0
	9.7000	0.1000	96.1	2.7	NaN	547	25.0
	9.8000	0.1000	94.3	-1.8	NaN	552	25.0
	9.9000	0.1000	98.3	4.0	NaN	558	25.0
	10.0000	0.1000	95.8	-2.5	NaN	563	25.0
	10.0000	0.0000	96.7	0.9	NaN	568	25.0

# **E - V curve EQP titration [1]** Sample 6/6

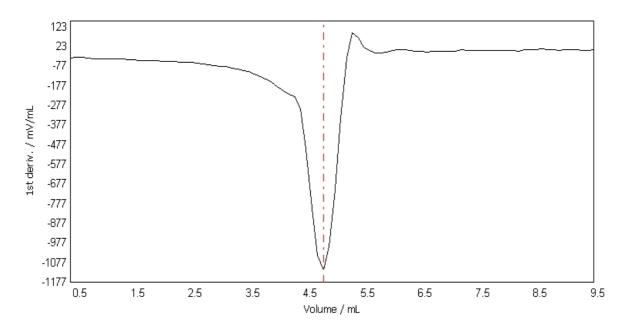


**CPC CPC** 8/28/2012 8:49:48 AM Method:

Start time: 8/28/2012 9:20:35

AM

#### dE/dV - V curve **EQP** titration [1] Sample



#### Raw data

Calculation

Result R2 = 0.99318 -- Mean Titer

Formula R2=Mean[R1]

Constant

C = 1

Molar mass M[None] = 1 g/mol

Equivalent number z[None] = 1

**Titer** 

CPC c = 0.01 mol/L**Titrant** 

Titer 0.99318

- (1) Modified
- (2) Excluded
- (3) Outside limits (4) Resource expired
- (5) srel above max srel(6) srel above max srel for multiple determination
- (7) Value outside limits, not saved in setup
- (8) Sample data outside limits
- (9) Standard evaluation used
- (10) Result from buffer

Created: - (Administrator), 8/28/2012 9:31:54 AM