072411 SNOW

Biodegradation by Semi-Continuous Activated Sludge Treatment

Material : Aroclor 1242

Unit No 5

Sampling Date (After Feeding)	8/3	8/4	8/5	8/6	8/7	8/8	8/9	8/10	8/11	8/12	8/13	8/14	8/15	8/16	8/17	8/18	8/19	8/20	8/21	8/22	8/23	8/24	8/25
Mg Aroclor 1242 Fed Every 24 Hours								1.0	→														
Mg Aroclor 1242 in Mixed Liquor After Feeding								1.16	1.12	1.07	2.84				3.16	6.92	1.60	2.08				0.83	2.81
Mg Aroclor in Mixed Liquor 24 Hrs Later								0.91	0.53	1.02	1.04				4.85	1.49	1.49	1.47				2.64	5.7
Decrease in Aroclor 1242 over 24 Hrs (Mg)								0.25	0.49	0.05	1.80				-1.69	5.43	0.11	0.61				-1.75	-2.8
Disappearance Rate (%)								22	44	3	57				-53	76	7	29				-197	-105
Sludge Volume (ml)	150	150	165	165	155	170	160	165	180	185	190	160	180	200	205	200	200	200	195	200	240	224	220
Suspended Solids (mg/l)				2400							2920							2820					
Mixed Liquor Aroclor (ml)				5		210		200	40	40	115	170			20	40	40	45	170			220	40
pH	7.30	7.46	7.24	7.20	7.09	7.25	7.35	7.41	7.44	7.51	7.52	7.51	7.55	7.49	7.50	7.70	7.44	7.47	7.46	7.43	7.42	7.61	7.43
BOD Disappearance Rate (%) (Conc. Fed/24 Hrs)	>95	→																					

Sampling Date (After Feeding)	8/26	8/27	8/28	8/29	8/30	8/31	9/1	9/2	9/3	9/4	9/5	9/6	9/7	9/8	9/9	9/10	9/11	9/12	9/13	9/14	9/15	9/16	9/17
Mg Aroclor 1242 Fed Every 24 Hours	40																						
Mg Aroclor 1242 in Mixed Liquor After Feeding	4.30	3.65				1.93	3.35	2.26	5.23					2.30	9.09	3.80				—	4.16		
Mg Aroclor 1242 in Mixed Liquor 24 Hrs Later	3.10	3.76				2.11	2.16	4.44	4.49					1.72	3.48	1.52				3.51	3.23		
Decrease in Aroclor 1242 over 24 Hrs (Mg)	1.20	-0.11				-0.18	1.09	1.58	0.74					0.58	1.60	1.88				—	0.33		
Disappearance Rate (%)	28	-3				-9	34	55	14					25	39	46					8		
Sludge Volume (ml)	210	210	170	155	165	160	150	150	150	150	150	150	150	140	150	145	140	140	130	130	130	130	130
Suspended Solids (mg/l)		3220							2200							2220							2140
Mixed Liquor Aroclor (ml)	40	40	270			20	40	40	45	220				20	40	45	220			20	40	40	40
pH	7.41	7.37	7.42	7.50	7.43	7.51	7.58	7.62	7.57	7.63	7.63	7.72	7.64	7.61	7.56	7.56	7.55	7.68	7.70	7.65	7.63	7.55	7.49
BOD Disappearance Rate (%) (Conc. Fed/24 Hrs)	7915	→																					

Biodegradation by Semi-Continuous Activated Sludge Treatment

Material: Aroclor 1242

Unit No 6

Sampling Date (After Feeding)	41 9/18	41 9/19	42 9/20	43 9/21	44 9/22	45 9/23	46 9/24	47 9/25	48 9/26	49 9/27	50 9/28	51 9/29	52 9/30	53 10/1	54 10/2	55 10/3	56 10/4	57 10/5	58 10/6	59 10/7	60 10/8	61 10/9	62 10/10
Mg Aroclor 1242 Fed Every 24 Hours	1.0	→																					
Mg Aroclor 1242 in Mixed Liquor After Feeding																			1.25				
Mg Aroclor 1242 in Mixed Liquor 21 Hrs Later																			1.61				
Decrease in Aroclor 1242 over 21 Hrs (Mg)																			-0.36				
Disappearance Rate (%)																			-29				
Sludge Volume, ml	110	115	120	150	100	120	120	110	110	100	110	100	110	120	115	100	100	100	100	130	130	110	100
Suspended Solids, mg/liter							2320							3060							3280		
Mixed Liquor Removed, ml	300						3	170						5	275				20	20	5	355	
pH	7.49	-	-	7.60	7.47	7.45	7.43	7.49	-	-	7.61	7.65	7.66	7.65	7.70	-	-	7.78	7.62	7.57	7.52	7.49	-
LAS Disappearance Rate, % (Bu mg Fed/24 Hrs)	799.5	→																					

Sampling Date (After Feeding)	63 10/11	64 10/12	65 10/13	66 10/14	67 10/15	68 10/16	69 10/17	70 10/18	71 10/19	72 10/20	73 10/21	74 10/22	75 10/23	76 10/24	77 10/25	78 10/26	79 10/27	80 10/28	81 10/29	82 10/30	83 10/31	84 11/1	85 11/2
Mg Aroclor 1242 Fed Every 24 Hours	1.0	→																					
Mg Aroclor 1242 in Mixed Liquor After Feeding		6.30	3.34	3.34												2.25 (2.16)	Pipetted Sample Side Arm Sample						
Mg Aroclor 1242 in Mixed Liquor 21 Hours Later		4.09	4.12	2.06												7.88 (9.98)	Pipetted Sample Side Arm Sample						
Decrease in Aroclor 1242 over 21 Hrs (Mg)		2.22	-0.78	1.28												-5.03 (-7.79)							
Disappearance Rate (%)		35	-22	32								Stirring Added →				-224 (-361)	LAS Feed Stopped →						
Sludge Volume, ml	110	110	125	120	120	100	100	120	115	120	125	225	200	210	230	240	240	-	250	225	230	260	260
Suspended Solids, mg/liter					2920							3100							2860				
Mixed Liquor Removed, ml					5	205						5	290			38	46		5	190			
pH	-	7.51	7.35	7.52	7.50	7.51	-	-	7.58	7.57	7.52	7.48	7.32	-	-	7.47	7.58	7.48	7.55	7.55	-	-	7.47
LAS Disappearance Rate, % (Bu mg Fed/24 Hrs)	799.5	→																					

MONS 072412

Biodegradation by Semi-Continuous Activated Sludge Treatment
Material: MCS 1016

Unit No 8

Sampling Date (After Feeding)	8/3	8/4	8/5	8/6	8/7	8/8	8/9	8/10 (1)	8/11 (2)	8/12 (3)	8/13 (4)	8/14 (5)	8/15 (6)	8/16 (7)	8/17 (8)	8/18 (9)	8/19 (10)	8/20 (11)	8/21 (12)	8/22 (13)	8/23 (14)	8/24 (15)	8/25 (16)
Mg MCS 1016 Fed Every 24 Hours								1.0	→														
Mg MCS 1016 in Mixed Liquor After Feeding								1.49	0.91		2.72				3.46	3.05	3.58	4.44				2.47	3.67
Mg MCS 1016 in Mixed Liquor 21 Hrs Later								1.36	0.38		1.21				3.23	3.91	4.25	2.21				2.55	4.40
Decrease in MCS 1016 over 21 Hrs (Mg)								0.13	0.53		1.51				0.23	-0.86	-0.67	2.23				-0.08	-0.73
Disappearance Rate (%)								9	58		56				7	-28	-19	50				-3	-20
Sludge Volume, ml	170	175	185	190	205	180	175	170	190	190	200	170	200	205	210	205	200	210	185	200	210	200	200
Suspended Solids, mg/liter				3040							2900							3020					
Mixed Liquor Removed, ml				5		270		40	40	40	45	210			20	40	40	45	260			20	40
pH	7.50	7.48	7.38	7.22	7.27	7.21	7.33	7.40	7.44	7.48	7.49	7.49	7.51	7.48	7.47	7.69	7.40	7.40	7.46	7.32	7.52	7.52	7.48
LAS Disappearance Rate, % (20 mg fed/24 hrs)	>99.5	→																					

* Sample lost

Sampling Date (After Feeding)	8/26 (17)	8/27 (18)	8/28 (19)	8/29 (20)	8/30 (21)	8/31 (22)	9/1 (23)	9/2 (24)	9/3 (25)	9/4 (26)	9/5 (27)	9/6 (28)	9/7 (29)	9/8 (30)	9/9 (31)	9/10 (32)	9/11 (33)	9/12 (34)	9/13 (35)	9/14 (36)	9/15 (37)	9/16 (38)	9/17 (39)
Mg MCS 1016 Fed Every 24 Hours	1.0	→																					
Mg MCS 1016 in Mixed Liquor After Feeding	4.32	6.75				5.62	10.25	12.99	15.75					2.32	4.24	2.78				3.56	4.40		
Mg MCS 1016 in Mixed Liquor 21 Hrs Later	4.16	*				10.29	11.87	3.49						1.83	4.85	-1.73				4.58			
Decrease in MCS 1016 over 21 Hrs (Mg)	0.06					-4.62	-1.62	9.20						0.39	-0.61	1.05				-1.02			
Disappearance Rate (%)	1					-82	-16	35						18	-14	32				-29			
Sludge Volume, ml	200	200	190	200	195	180	190	190	195	145	130	135	150	140	155	150	130	130	150	140	140	140	140
Suspended Solids, mg/liter		2740							3220							2080							2900
Mixed Liquor Removed, ml	40	45	130			20	40	40	45	340				20	40	45	285			20	40	40	45
pH	7.45	7.40	7.51	7.52	7.43	7.41	7.43	7.52	7.48	7.52	7.56	7.63	7.62	7.55	7.48	7.48	7.51	7.60	7.70	7.60	7.53	7.47	7.43
LAS Disappearance Rate, % (20 mg fed/24 hrs)	>99.5	→																					

MONS 072413

Biodegradation by Semi-Continuous Activated Sludge Treatment

Material: MCS 1016

Unit No 2

Sampling Date (After Feeding)	9/13	9/19	9/20	9/21	9/22	9/23	9/24	9/25	9/26	9/27	9/28	9/29	9/30	10/1	10/2	10/3	10/4	10/5	10/6	10/7	10/8	10/9	10/10
Mg MCS 1016 Fed Every 24 Hours	1.0	---																					
Mg MCS 1016 in Mixed Liquor After Feeding																			2.32				
Mg MCS 1016 in Mixed Liquor 21 Hrs Later																			2.28				
Decrease in MCS 1016 over 21 Hrs (Mg)																			-0.96				
Disappearance Rate (%)																	Stairing Added		-41				
Sludge Volume, ml	130	140	130	135	130	130	130	130	125	115	130	140	145	150	125	120	130	140	160	200	225	190	190
Suspended Solids, mg/liter							2740							2220							2960		
Mixed Liquor Removed, ml	200			40			5	130						5	760				20	20	5	235	
pH	7.47	-	7.52	7.53	7.46	7.42	7.41	7.46	-	-	7.50	7.48	7.55	7.35	7.55	-	-	7.54	7.59	7.46	7.44	7.45	-
LAS Disappearance Rate, % (20 Mg Fed/24 Hrs)	>99.5	--->																					

Sampling Date (After Feeding)	10/11	10/12	10/13	10/14	10/15	10/16	10/17	10/18	10/19	10/20	10/21	10/22	10/23	10/24	10/25	10/26	10/27	10/28	10/29	10/30	10/31	11/1	11/2
Mg MCS 1016 Fed Every 24 Hours	1.0	--->																					
MCS 1016 in Mixed Liquor After Feeding		6.30	6.42	3.88												3.67 (3.09)	Pipetted Sample Side Arm Sample						
MCS 1016 in Mixed Liquor 21 Hours Later		3.64	4.56	2.98												4.96 [illegible]	Pipetted Sample Side Arm Sample						
Decrease in MCS 1016 over 21 Hrs (Mg)		2.66	1.86	-0.10												-0.79 (-2.27)							
Disappearance Rate (%)		42	29	-3												-22 (-72)	LAS Feed Stopped						
Sludge Volume, ml	200	200	200	190	175	200	215	230	230	250	240	250	190	190	190	240	220	-	225	220	220	240	250
Suspended Solids, mg/liter					2[illegible]							2360							2600				
Mixed Liquor Removed, ml					5	10						5	785			22	22		5	60			
pH	-	7.69	7.[illegible]	7.59	7.[illegible]	7.63	-	-	7.70	7.59	7.50	7.48	7.45	-	-	7.52	7.61	7.75	7.61	7.60	-	-	7.40
LAS Disappearance Rate, % (20 Mg Fed/24 Hrs)	>99.5	--->																					

MONS 072414