

Appendix C

Table A-1 Optical Density value for ATCC7757 at 20°C

Day	Optical Density Value					
	pH 4.5	pH 5.5	pH 6.5	pH 7.5	pH 8.5	pH 9.5
3	0.0248	0.0030	0.0125	0.1583	0.1610	0.2108
5	0.0465	0.0497	0.0420	0.2023	0.2770	0.3698
7	0.0175	0.0363	0.1293	0.0513	0.6835	0.1328
14	0.0200	0.0850	0.5305	0.1870	0.5110	0.2005
21	0.0200	0.6490	0.7398	0.4787	0.8325	0.4053
28	0.0223	0.4363	0.6858	0.5343	0.6030	0.2568

Table A-2 Optical Density value for ATCC7757 at 37°C

Day	Optical Density Value					
	pH 4.5	pH 5.5	pH 6.5	pH 7.5	pH 8.5	pH 9.5
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.029	0.015	0.053	0.718	0.891	0.518
5	0.178	0.099	0.150	0.752	0.955	0.569
7	0.029	0.097	0.474	0.698	0.848	0.372
14	0.025	0.048	0.184	0.463	0.587	0.198
21	0.025	0.257	0.636	0.678	0.870	0.375
28	0.018	0.301	0.346	0.564	0.254	0.131

Table A-3 Optical Density value for ATCC7757 at 60°C

Day	Optical Density Value					
	pH 4.5	pH 5.5	pH 6.5	pH 7.5	pH 8.5	pH 9.5
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3	0.0180	0.0090	0.0460	0.0408	0.0047	0.0025
5	0.0015	0.0875	0.0955	0.0170	0.0473	0.0355
7	0.0160	0.0275	0.0815	0.0020	0.0220	0.0158
14	0.0235	0.0028	0.0138	0.0363	0.0700	0.1975
21	0.0195	0.0250	0.0728	0.0368	0.0543	0.0575
28	0.0195	0.0000	0.0000	0.0053	0.0543	0.0148

Table A-4 Cell number for ATCC7757 at 20°C

Days	Cell number, Cell/ml					
	pH 4.5	pH 5.5	pH 6.5	pH 7.5	pH 8.5	pH 9.5
3	1.11E+08	3.38E+07	7.63E+07	3.00E+07	5.75E+07	4.75E+07
5	2.75E+07	5.67E+07	1.05E+08	1.17E+07	1.34E+08	1.74E+08
7	8.75E+07	3.35E+08	3.21E+08	7.13E+07	4.04E+08	3.90E+08
14	3.49E+08	1.25E+07	8.73E+08	8.15E+08	1.15E+09	1.18E+09
21	2.25E+07	7.82E+08	1.88E+09	7.03E+08	1.54E+09	7.36E+08
28	6.25E+06	3.31E+08	4.28E+08	1.31E+09	8.99E+08	6.46E+08

Table A-5 Cell number for ATCC7757 at 37°C

Days	Cell number, Cell/ml					
	pH 4.5	pH 5.5	pH 6.5	pH 7.5	pH 8.5	pH 9.5
3	1.11E+08	3.38E+07	7.63E+07	3.00E+07	5.75E+07	4.75E+07
5	2.75E+07	5.67E+07	1.05E+08	1.17E+07	1.34E+08	1.74E+08
7	8.75E+07	3.35E+08	3.21E+08	7.13E+07	4.04E+08	3.90E+08
14	3.49E+08	1.25E+07	8.73E+08	8.15E+08	1.15E+09	1.18E+09
21	2.25E+07	7.82E+08	1.88E+09	7.03E+08	1.54E+09	7.36E+08
28	6.25E+06	3.31E+08	4.28E+08	1.31E+09	8.99E+08	6.46E+08

Table A-6 Cell number for ATCC7757 at 60°C

Days	Cell number, Cell/ml					
	pH 4.5	pH 5.5	pH 6.5	pH 7.5	pH 8.5	pH 9.5
0	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
3	1.10E+08	7.00E+07	1.23E+08	1.75E+07	2.83E+07	1.25E+07
5	6.63E+07	8.13E+07	8.38E+07	3.13E+07	1.29E+08	4.25E+07
7	4.38E+07	1.38E+08	2.51E+08	2.55E+08	4.63E+07	1.88E+07
14	2.38E+07	2.00E+07	1.51E+08	8.38E+07	2.76E+08	1.10E+09
21	2.63E+07	5.13E+07	7.75E+07	1.31E+08	1.95E+08	6.38E+07

Table A-7 Optical Density value for BARAM at 20°C

Day	Optical Density Value					
	pH 4.5	pH 5.5	pH 6.5	pH 7.5	pH 8.5	pH 9.5
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0932	0.0968	0.2305	0.2163	0.2195	0.1757
7	0.0973	0.1903	0.2232	0.2662	0.2407	0.1865
14	0.1067	0.3155	0.6378	0.3953	0.5345	0.3758
21	0.0950	0.3033	0.5553	0.6057	0.6635	0.3537
28	0.0763	0.2348	0.7018	0.4500	0.6480	0.2778

Table A-8 Optical Density value for BARAM at 37°C

Day	Optical Density Value					
	pH 4.5	pH 5.5	pH 6.5	pH 7.5	pH 8.5	pH 9.5
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.0140	0.0608	0.0763	0.1627	0.3973	0.1345
7	0.0265	0.0720	0.1657	0.3002	0.4442	0.1736
14	0.0568	0.0805	0.1420	0.4308	0.5498	0.0678
21	0.1277	0.0694	0.5065	0.2976	0.5685	0.0623
28	0.0203	0.0570	0.4437	0.2770	0.4862	0.0465

Table A-9 Optical Density value for BARAM at 60°C

Day	Optical Density Value					
	pH 4.5	pH 5.5	pH 6.5	pH 7.5	pH 8.5	pH 9.5
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5	0.2025	0.1737	0.2192	0.2092	0.3462	0.2800
7	0.1963	0.1648	0.1906	0.1666	0.1800	0.2200
14	0.1892	0.1177	0.1736	0.1703	0.1848	0.1912
21	0.1666	0.1612	0.1718	0.1772	0.2553	0.1995
28	0.1360	0.1473	0.1630	0.2055	0.2332	0.1930

Table A-10 Cell number for BARAM at 20°C

Days	Cell number, Cell/ml					
	pH 4.5	pH 5.5	pH 6.5	pH 7.5	pH 8.5	pH 9.5
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	8.75E+06	6.00E+06	8.75E+06	1.03E+07	1.10E+07	9.33E+06
7	9.33E+06	5.33E+06	6.42E+06	8.66E+06	1.40E+07	1.31E+07
14	5.50E+06	1.63E+07	4.68E+07	1.89E+07	4.22E+07	8.75E+06
21	4.58E+06	4.33E+06	6.62E+07	6.44E+07	6.88E+07	8.08E+06
28	6.67E+06	4.25E+06	3.43E+07	5.98E+07	4.61E+07	6.00E+06

Table A-11 Cell number for BARAM at 37°C

Days	Cell number, Cell/ml					
	pH 4.5	pH 5.5	pH 6.5	pH 7.5	pH 8.5	pH 9.5
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	1.59E+07	8.17E+06	1.55E+07	1.66E+07	2.20E+07	6.42E+06
7	5.75E+06	4.42E+06	6.71E+07	3.54E+07	3.36E+07	1.02E+07
14	1.64E+07	3.17E+06	1.42E+08	1.18E+08	1.08E+08	9.92E+06
21	4.33E+06	2.83E+06	1.35E+08	1.35E+08	1.43E+08	8.08E+06
28	4.83E+06	8.83E+06	9.28E+07	4.71E+07	1.11E+08	6.25E+06

Table A-12 Cell number for BARAM at 60°C

Days	Cell number, Cell/ml					
	pH 4.5	pH 5.5	pH 6.5	pH 7.5	pH 8.5	pH 9.5
3	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
5	8.33E+05	1.08E+06	1.00E+06	1.83E+06	1.14E+07	1.18E+07
7	1.17E+06	1.33E+06	1.08E+06	2.25E+06	1.04E+07	1.04E+07
14	3.67E+06	2.50E+06	6.00E+06	9.33E+06	1.98E+07	1.46E+07
21	2.25E+06	2.00E+06	4.25E+06	6.92E+06	4.13E+07	1.41E+07
28	2.33E+06	3.25E+06	3.50E+06	6.67E+06	2.60E+07	2.13E+07

Table A-13 Metal weight loss and corrosion rate data of steel coupon exposed to abiotic and biotic sample

Time (Hours)	Metal Weight Loss, gram (g)			Corrosion rate, Cr (mm/yr)		
	Abiotic	ATCC7757	BARAM	Abiotic	ATCC7757	BARAM
168	0.0054	0.0152	0.0097	0.1791	0.5058	0.3209
336	0.0078	0.0272	0.0157	0.1294	0.4515	0.2600
504	0.0078	0.0185	0.0160	0.0865	0.2048	0.1775
672	0.0124	0.0256	0.0219	0.1026	0.2123	0.1817

*Abiotic = Modified Baar's Media

*Biotic = ATCC7757 or BARAM