

Eden Research Laboratory

To: BioSphere

Date: August 16, 2016

From: Thomas Poth

Number of pages including cover: 2

Regarding: ASTM D 5511-12 test update for Toothbrushes - 924 days

The carbon content of the treated sample in this test was estimated to be 82.2% carbon and the untreated sample has been approximated to contain 85.3% carbon.

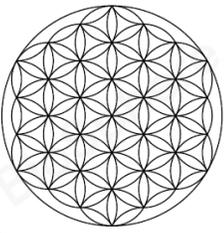
Update

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	Inculum	Negative	Positive	894 - Toothbrush Untreated	895 - Treated Toothbrush
Cumulative Gas Volume (mL)	1440.6	1826.2	9086.5	2889.0	13516.4
Percent CH ₄ (%)	37.3	38.5	36.8	39.8	51.3
Volume CH ₄ (mL)	537.9	703.9	3344.6	1149.1	6939.5
Mass CH ₄ (g)	0.38	0.50	2.39	0.82	4.96
Percent CO ₂ (%)	42.4	39.7	43.8	38.6	36.6
Volume CO ₂ (mL)	611.2	725.4	3979.8	1116.1	4943.3
Mass CO ₂ (g)	1.20	1.42	7.82	2.19	9.71
Sample Mass (g)	1,000	10	10	25.7	20.7
Theoretical Sample Mass (g)	0.0	8.6	4.4	21.9	17.0
Biodegraded Mass (g)	0.62	0.77	3.92	1.21	6.37
Percent Biodegraded (%)		1.8	74.8	2.7	33.7



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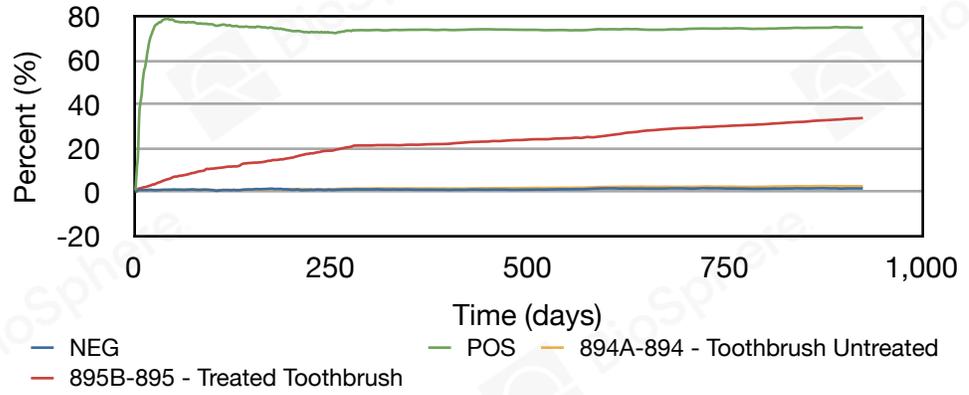
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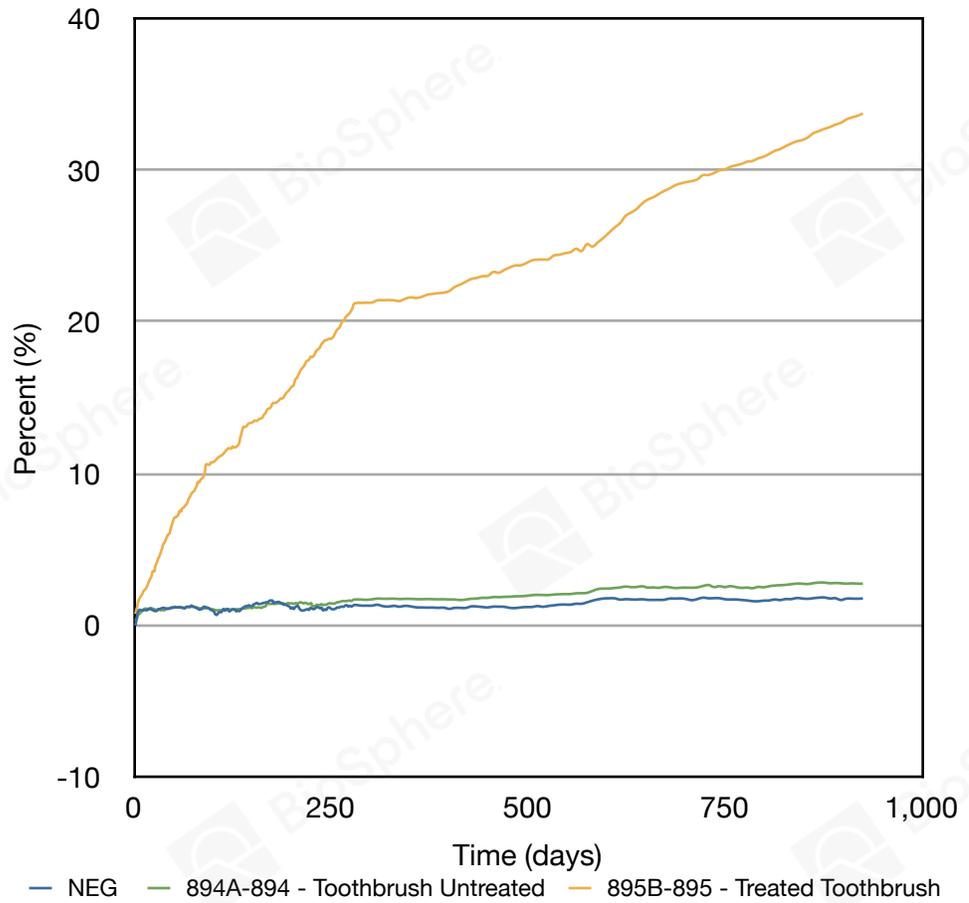
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Biodegradation



Biodegradation



Considering the thickness of the sample, this rate of biodegradation is very good. All samples and control appear to be establishing a linear profile.