

**Report To:**

Green Genius LLC
c/o Brian Davis
Nextep, Inc.
220 Graham St
San Francisco CA 94129

Date Collected:5/08/2009

Date Received:5/11/2009

Laboratory Report#:N0945097-0821**Revised Report Date:8/21/2009****Report Reprint to Green Genius:9/03/2009****ASTM D 5511****Inoculum Source:**

- Organic Compost – McEnroe Organic Farms, Millerton, NY
 - ❖ Solid Content 22%
 - ❖ pH 8.2
 - ❖ Volatile Fatty Acids 0.7 g/kg
 - ❖ Ammonia Nitrogen 1.0 mg/kg
 - ❖ Volatile Solids 24.9 %

Procedure:

1. Three weighed replicates of the test material were prepared by placing them into 1000 grams of inoculum in containers which were then attached to the gas measuring devices. Incubation temperatures of $52 \pm 2^{\circ}\text{C}$ were maintained by placing the containers in temperature controlled incubators.
2. Three blanks containing only inoculum, were prepared as described in (1) above, as were three positive controls each containing 10 grams of thin layer grade cellulose. Three negative controls were also run utilizing untreated samples supplied by Nextep.

THEORETICAL GAS PRODUCTION

	Carbon Content	(*)Methane	(*)Carbon Dioxide
Sample: Green Genius 2% Ecopure	42.85 grams	57.25 grams	157 grams
Positive Control (20.0 grams)	8.4 grams	11.2 grams	31.2 grams
Negative Control (100 grams)	85.6 grams	115 grams	315 grams

3. Samples were incubated for fifteen days in the dark, or at times, diffused light. Daily, gas volumes were determined. Carbon Dioxide and Methane concentration were also determined. Temperature and room atmosphere pressures were monitored during the course of incubation.
4. Upon completion of incubation samples were reweighed and weight loss determined.

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**ASTM D 5511****INITIAL GAS PRODUCTION**

Day	Green Genius Trashbags 2% Ecopure Additive			Negative Control			Inoculum			Positive Control		
	1	950	1,000	700	295	320	315	300	325	212	424	395
2	450	550	450	140	110	160	110	96	20	432	430	434
3	500	550	630	130	140	150	120	150	120	550	480	470
4	230	300	350	165	150	200	130	111	114	605	665	671
5	420	350	450	240	290	250	270	252	265	1,073	846	992
6	500	550	550	295	290	270	300	293	250	887	855	863
7	900	675	500	250	265	290	255	160	265	950	820	900
8	750	500	450	275	270	290	265	320	218	935	933	950
9	700	850	850	320	310	340	308	302	219	868	919	820
10	275	200	170	240	190	220	210	120	166	908	835	846
11	300	210	200	310	257	250	247	329	247	768	741	891
12	200	400	180	246	245	230	245	230	210	868	841	891
13	190	325	400	260	255	247	245	323	212	881	881	803
14	150	250	100	190	210	200	185	160	164	533	512	549
15	353	339	458	170	165	160	143	149	131	545	505	590
16	224	160	129	180	160	149	137	260	123	665	535	353
17	621	494	748	700	710	760	804	748	628	1,200	1,271	1,200
18	329	329	386	462	470	449	452	424	405	660	743	612
19	240	436	185	174	182	170	175	169	153	796	632	714
20	160	142	133	105	119	116	124	71	98	667	671	622
21	195	182	208	85	110	99	107	91	65	610	589	568
22	192	233	247	105	110	100	137	92	89	613	496	509
23	151	192	178	97	90	95	83	92	83	534	408	437
24	1,050	990	1,000	500	485	490	490	485	510	890	1,040	1,200
25	950	895	810	450	458	462	470	450	400	800	970	1,100
26	800	700	725	432	449	450	465	445	375	672	900	1,050
27	725	650	510	400	415	465	420	400	251	600	740	700
28	500	490	357	300	330	190	390	410	220	410	600	452
TOTAL	13,005	12,942	12,054	7,516	7,555	7,567	7,587	7,457	6,213	20,344	20,253	20,582

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ADDITIONAL DATA

Date	Green Genius Trashbags 2% Ecopure Additive (50.2 grams)			Negative Control (PE) (100 grams)			Innoculum (1000 grams)			Positive Control (20 grams)		
	Gas Volume ml	CH ₄ % Avg	CO ₂ % Avg	Gas Volume ml	CH ₄ % Avg	CO ₂ % Avg	Gas Volume ml	CH ₄ % Avg	CO ₂ % Avg	Gas Volume ml	CH ₄ % Avg	CO ₂ % Avg
7/21	800			500			495			1,400		
7/22	780			490			490			1,350		
7/23	734			470			478			1,305		
7/24	722			460			450			1,300		
7/25	705			410			444			1,255		
7/26	700			400			420			1,100		
7/27	680			230			400			990		
7/28	599			150			347			880		
TOTAL	5,720	61.0	0.3	3,110	58.2	0.6	3,524	62.4	0.6	9,580	61.2	0.6
INITIAL	12,667	75.0	0.7	7,546	80.2	0.6	7,086	77.9	0.6	20,393	68.3	0.7
GRAND TOTAL	18,387	72.1	0.6	10,656	66.8	0.58	10,610	75.6	0.58	29,973	74.6	0.68

COMPUTATION OF DATA

Sample	Average		Methane (%)	Methane		Carbon Dioxide			Total CH ₄ +CO ₂	Sample- Inoculum	% Bio- degradation
	Weight (grams)	Gas Vol (mL)		(mL)	(Wt) C (grams)	(%)	(mL)	(Wt) C (grams)			
Green Genius Trashbags 2% Ecopure Additive	50.2	18,387	72.1	13,257	7.11	0.60	110	0.22	7.32	2.96	6.91
Positive Cellulose	20.0	29,973	66.8	20,022	10.73	0.68	204	0.40	11.14	6.77	80.60
Negative PE	100.0	10,656	75.6	8,056	4.32	0.58	62	0.12	4.44	0.08	0.09
Inoculum	1000.0	10,610	74.6	7,915	4.24	0.58	62	0.12	4.36		

Results: *Treated Green Genius trashbags when tested by ASTM D 5511, which determines anaerobic biodegradation of plastic materials under high solid anaerobic digestion conditions, were found to be biodegradable. This procedure simulates the conditions that would be in a properly operated landfill treating pre-treated household waste as a sole substrate.*

Approved by: William W. Ullmann, Ph.D.
Laboratory Director