



SANTAINERS LIMITED

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NATURALLY BIODEGRADABLE SANICUP STYROFOAM – TEST RESULTS

Sanicup brand foam products made at our factory in Trinidad was sent for testing in the USA.

TEST RESULTS. The results show 90.5% BIODEGRADATION over a period of 1035 days. See attached. The ASTM International Standard D5511 Test Method was used. The test was done by Eden Research Laboratory of Albuquerque, New Mexico, USA. (www.edenresearchlab.com)

To summarize our results:

- 25% BIODEGRADATION IN 92 DAYS (3 months, 2 days)
- 50% BIODEGRADATION IN 298 DAYS (9 months, 25 days)
- 75% BIODEGRADATION IN 547 DAYS (1 year, 6 months, 2 days)
- 85% BIODEGRADATION IN 640 DAYS (1 year, 9 months, 5 days)
- 89.1% BIODEGRADATION IN 790 DAYS (2 years, 2 months)
- 90.5% BIODEGRADATION IN 1035 DAYS (2 years, 10 months, 5 days)

After 1035 days the biodegradation has essentially ceased and this is shown by the plateau on the Test Study. The test will never reach 100% biodegradation because the remaining carbon was used by the microbes to build biomass. The same is true for the Biodegradable Reference Positive Control (Cellulose) which will also never reach 100% biodegradation.

Residual Material:

For further reading see Appendix #1 which deals with Anaerobic Digestion Outputs. The Natural Biodegradation of Sanicup Foam products 'Styrofoam' takes place anaerobically (without oxygen) and is quite similar to the process used in Anaerobic Digesters. The residual material left after the process can remain safely in the landfill and is described in the article.



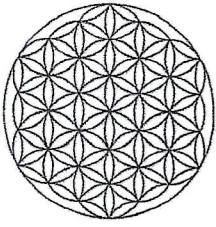
Winner of the Prime Minister's Exporter of the Year Award - 2009
Miscellaneous Manufacturing Industry Leader Award - 2009



Notes:

- 1) Santainers Ltd. does not use additives. The Biodegradable plastic resin EVRgreen # evT280cz is made in Canada by EPSILYTE CANADA. ULC (www.epsilyte.com).
- 2) The Biodegradable plastic resin complies with the food contact regulations of the United States Food and Drug Administration, Health Canada and the European Union.
- 3) Santainers Ltd. has manufactured ALL of its EPS (Styrofoam) products since May 2019 with the Biodegradable resin. Trial runs began in November 2018.
- 4) To conclude, Santainers BIODEGRADABLE EPS products will degrade NATURALLY in landfills such as in use in the CARICOM region.

In contrast, all Alternative products described as 'COMPOSTABLES' are required to be manually segregated from the waste stream and then sent to an Industrial Composting Facility' **before they can fulfill their claims.** An Industrial Composting Facility is expensive to build, operate and will be 'forever' a financial burden on the State. Santainers Ltd EPS products have no need for an Industrial Composting Facility.



Eden Research Laboratory

Up-
date

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Regarding: D5511 Study of Santainers Sample (1035 Days)

	Inculum	Negative	Positive	2030 - Poly- styrene Foam Cups
Cumulative Gas Volume (mL)	2225.7	2194.9	10778.5	20613.1
Percent CH ₄ (%)	47.2	47.5	41.1	48.7
Volume CH ₄ (mL)	1050.7	1042.5	4428.5	10042.4
Mass CH ₄ (g)	0.75	0.74	3.16	7.17
Percent CO ₂ (%)	38.2	37.4	41.6	36.1
Volume CO ₂ (mL)	850.3	819.9	4485.1	7451.5
Mass CO ₂ (g)	1.67	1.61	8.81	14.64
Sample Mass (g)	10	10	10	10.0
Theoretical Sample Mass (g)	0.0	8.6	4.2	9.2
Biodegraded Mass (g)	1.02	1.00	4.78	9.37
Percent Biode- graded (%)		-0.2	89.0	90.5

Biodegradation

