

सिपेट : स्कूल फोर एडवांस्ड रिसर्च इन पोलिमरस
(एस.ए.आर.पि) - एल.ए.आर.पि.एम्

रसायन एवं पेट्रोरसायन विभाग
रसायन एवं उर्वरक मंत्रालय, भारत सरकार
बी-२५, सी.एन.आई काम्प्लेक्स, पटिआ, भुवनेश्वर - 751024
दूरभाष : 0674-2742852 / 2740173 फैक्स - 0674-2740463
ई-मेल : larpmcipet@larpm.in, वेबसाइट : www.larpm.gov.in
मुख्यालय : सिपेट, गिण्डी, चेन्नई - 600 032



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CIPET : SCHOOL FOR ADVANCED RESEARCH
IN POLYMERS (SARP) -LARPM

Department of Chemicals & Petrochemicals
Ministry of Chemicals & Fertilizers, Govt. of India
B-25, C.N.I. Complex, Patia, Bhubaneswar-751024
Phone : 0674-2742852 / 2740173, Fax : 0674-2740463
Email : larpmcipet@larpm.in, Web : www.larpm.gov.in
Head Office : CIPET, Guindy, Chennai - 600 032

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ANALYSIS REPORT



Report No. : 00136
Date : 16.12.2020

Issued to

M/s. Green Dot Biopak

Factory Address:-

Godown No.1, Joshi Estate- 3, Block No.197,
Near Siddhi Oil Mill Canal Road, Sarkhej- Bavla Highway,
Changodar - 382213, Ahmedabad, Gujarat, India.

Office Address:-

A/103, Mondeal Heights, Ramdevnagar, S.G. Highway,
Ahmedabad-380015, Gujarat, India

Customer Ref. No. & Date : Your letter dated 04.03.2020 & SSF dated 05.03.2020 &
Email dated 27.02.2020 & 15.12.2020

Work order Ref. No. & Date : LARPM/BBS./2019-20/249 dated 18.03.2020

As per Standard : As per part C

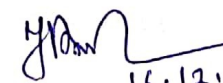
PART A: PARTICULARS OF SAMPLE SUBMITTED

- | | |
|--|--|
| a) Name of the Sample | : "Transparent Film" -As stated by the party |
| b) Grade/verity/Type/Size/Class etc. | : Film Sample - as supplied by the party. |
| c) Code No. | : 6A-as stated by the party. |
| d) Quantity (pcs./mtr/gm/nos) | : 2 Kg. |
| e) Mode of packing
(Sealed carton/polypouch/container or not) | : Packed in Envelope. |
| f) Date of receipt of sample | : 18.03.2020 |
| g) Date of Performance of test | : 11.05.2020 – 10.12.2020 |
| h) Any other information | : NIL. |

PART B: SUPPLEMENTARY INFORMATION

- | | |
|---|---------------------------------|
| a) Reference to sampling procedure | : Drawn & supplied by the party |
| b) Supporting documents for
Measurements taken and results derived
like graphs, tables, sketches and/or
Photographs as appropriate to
test report if any (to be attached) | : As per part -C |
| c) Deviation from the test methods as
Prescribed in relevant ASTM/ISO/BIS/
Work Instructions, If any- | : Nil |


16.12.2020
Mr. Pinaki Chatterjee
AUTHORISED SIGNATORY


16.12.2020
Dr. Manoranjan Biswal
AUTHORISED SIGNATORY

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एक कदम स्वच्छता की ओर

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PART C: TEST RESULTS

ANALYSIS REPORT



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Sl. No	Name of the Test	Test Method/Standard	Unit	Results Obtained	Specified Requirements
Sample Details: "Transparent Film", Sample ID-6A -As stated by the party.					
1.	Material Identification	FTIR/DSC	--	Polylactic Acid (PLA) & Polybutylene adipate terephthalate (PBAT) based material	---
2.	Disintegration (Dry mass remains in 2 mm sieve after 84 days)	ISO 17088:2012 / IS 17088:2008	%	7.49	No more than 10% of original dry mass remain
3.	Ultimate aerobic Biodegradation (with reference to 100% degradation of positive reference)	ISO 17088:2012 / IS 17088:2008	%	91.05 (at the end of 180 days)	> 90 (at the end of the test period not more than 180 days.)
4.	Plant Growth study				
	a) Monocotyledon (Rice)	ISO 17088:2012 / IS 17088:2008	%	92.33	> 90
	% Seed Emergence				
	b) Dicotyledon (Mungo)		%	92.63	> 90
	% Seed Emergence				

Note: The detailed observation on biodegradability test is enclosed as Annexure-I.


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Sl. No	Name of the Test	Test Method/Standard	Unit	Results obtained	Specified Requirements
5.	Heavy metals concentration(#)	ISO 17088:2012 / IS 17088:2008	ppm		
	Arsenic (As)			0.006	20
	Copper (Cu)			BDL(DL:0.002)	500
	Nickel (Ni)			BDL(DL:0.005)	100
	Zinc (Zn)			0.136	2500
	Cobalt (Co)			0.216	--
	Chromium (Cr)			0.017	300
	Molybdenum (Mo)			0.292	--
	Mercury (Hg)			0.0007	10
	Cadmium (Cd)			BDL(DL:0.0008)	20
	Lead (Pb)			0.168	500
	Selenium (Se)			0.005	--

- BDL-Below Detection Limit, DL-Detection Limit.


* Based on Municipal waste (Management and Handling) Rules, 1999 notified on 27th September, 1999 by Ministry of Environment and Forests, Government of India. Note that concentration of metals like cobalt, molybdenum, fluorine and selenium is not mentioned in the notification.

PART D: REMARKS: NIL

- Note:
1. This Test Report / Certificate is issued only for the samples submitted to CIPET:SARP-LARPM.
 2. The results stated above related only to the items tested.
 3. The quality of the subsequent production lot has to be ensured by the purchaser.
 4. This Test Report shall not be reproduced except in full without the written approval of the laboratory.
 5. Any anomaly/discrepancy in this report should be brought to the notice of CIPET:SARP-LARPM within 30 days from the date of issue.
 6. Subcontracted Tests (if any): Test marked as (#) Sub-contracted to the third party laboratory (CIPET, Chennai).

** End of the Report **


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