

**BEFORE THE NATIONAL GREEN TRIBUNAL,
EASTERN ZONE BENCH, KOLKATA
[Original Application No. 49 of 2024(EZ)]**

IN THE MATTER OF

Manbodh Kumar _____ **Applicant.**

VERSUS

THE STATE OF BIHAR AND OTHERS

_____ **RESPONDENTS.**

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JAYANT KISTO
(Advocate for the Respondent No. 13)
Mahesh nagar, road no. 04, Patna-800024
MOB:- 9999446310.
EMAIL: jayantkisto@gmail.com

PLACE: PATNA

DATE: 19-08-2025.

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EASTERN ZONE BENCH, KOLKATA
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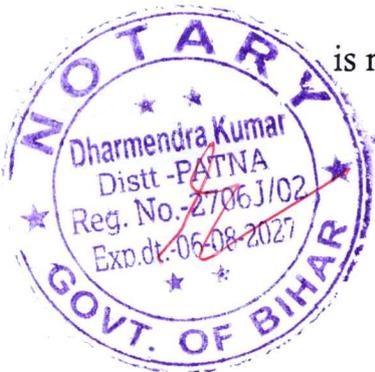
_____RESPONDENTS.

REPLY/RESPONSE ON BEHALF OF THE
RESPONDENT NO. 13, M/S MSB POLYMERS:

1. That the present Reply/Counter affidavit/Response has been filed by the Respondent No. 13, M/S MSB Polymer Pvt. Ltd., through its proprietor Sri Nand Kumar, aged about- 48 years, Resident of: - Shanti Bhawan, Langer Toli Lane, Nala Road, Patna-800024.



2. That I am aware of the facts of the present case on the basis of the records maintained at office of M/S MSB Polymer, that I believe to be true.
3. That at the outset, the answering Respondent denies each and all the allegation, statement, averments contained in the original application relating to the answering respondent and no part of its shall be deemed to be true for want of specific transverse. That save and except the matter of record and what is specifically admitted, each and every allegations, statements, averments and contentions made in the captioned original application filed by the applicant is denied.
4. That the answering respondent is a compliant unit and is operating its unit with all the necessary permissions, clearances, license/consent to operate. The answering respondent is following all the direction/guidelines issued time to time by the statutory authorities and is following all the law which are necessary to operate the industry. The answering respondent operates a unit in which there is no requirement of water and therefore there is no scope



of causing water pollution by the answering respondent and further the answering respondent is not causing any air and noise pollution in the area as alleged by the applicant.

5. That the answering respondent is engaged in manufacturing and production of Single Use Plastic items like- Glass, Cups, Plates, PET bottles, Food packaging item. The unit of the answering respondent was initially setup in the year 2014 after obtaining the licences and clearances from the concerned authorities.
6. That the answering respondent has obtained renewal of the Consent-to-Operate from the Bihar State Pollution Control Board both under the Air and the Water Act and the CTO is valid until 30.05.2027. The CTO granted to the answering respondent is for operating a Single Use Plastic Cutlery Items- Glass, Cups & Plates manufacturing from the bio-degradable raw materials, PET bottles; Food packaging items and PLA coated paper cups, plates, glass & bowls with D.G. Set 5.5 kVA. The answering respondent is operating the unit in



compliance to the CTO conditions. **A copy of the CTO issued both under the Air Act and Water Act is annexed and marked as Annexure: R13/A.**

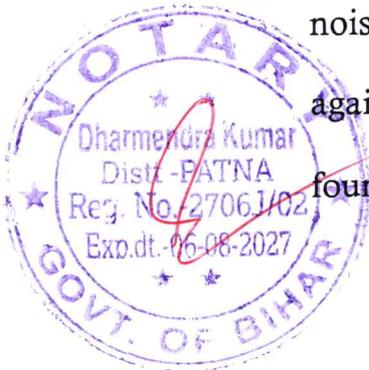
7. That the answering respondent in light of the Amendment introduced in the Plastic Waste Management Rules, 2016, has obtained Registration for Producer in light of Rule 13(2) of the Plastic Waste Management Rules, 2016. Further the Central Pollution Control Board after finding out that the answering respondent is fulfilling the criteria as per revised standard operating procedure (SOP) for issuing certificates as per the provisions 4(h) & 11(c) of the Plastic Waste Management Rules, 2018, for manufacturing and selling of compostable carry bags and commodities and accordingly issued certificate for Manufacturing and Selling of compostable plastic bags and commodities in Indian market vide certificate contained in CPCB/MSB Polymer/Bihar/292, dated 22.05.2023. A copy of the Registration for Producer issued by BSPCB and certificate issued by CPCB for Manufacturing and Selling



of compostable plastic bags and commodities in Indian market is annexed and marked as **Annexure R13/B**.

8. That the answering respondent has also submitted the samples of its plastic (PLA compound) to CIPET laboratory for advances research in polymeric materials, Department of Chemicals & Petrochemicals, Ministry of Chemicals and Fertilizers, Govt. of India, and the samples were found to be compostable and the composability percentage was found to be 90.87% and further the heavy material concentration as found to be Below detection Limit (BDL). A copy of the tests and analysis report is annexed and marked as **Annexure-R13/C**.

9. That from the above stated facts it shall be evident that the answering respondent are operating their unit in full compliance to the statutory norms and in supervision of the regulatory authorities and is not causing any air and noise pollution in the area and the allegation levelled against the answering respondent is baseless and not well founded.



10. That the applicant in his application has stated that the operation of unit of answering respondent and other industries have resulted in severe respiratory diseases, skin irritation, and fatalities among residents especially children and senior citizens. However, has not backed the statement by any medical report/prescription and has simply asserted the same. Further, has made a statement that the industries are operating without necessary permission of the BSPCB, which is a false statement as the answering respondent has obtained consent from the BSPCB for operating its unit.

11. That the concerned area is not a residential area and around 2015 there were no residential houses in the area and recently some houses have come in the area. It is humbly submitted that the applicant ha recently built is house and the industries were established here from decades. Therefore, he with his open eyes has constructed his house and now by making false statement on affidavit is trying to oust the private respondents from the area.



12. That in para 3 of the original application, with respect to answering respondent it has been submitted by the applicant that “utilizes rotten plastic waste, emitting foul odor that spreads across the neighbourhood, causing breathing difficulties and severe discomfort”. It is stated that the statement is false and denied as the answering respondent uses virgin plastic granules for manufacturing items and as such it is not possible for the answering respondent to utilize rotten plastic waste for manufacturing as the same will not be compatible with the machinery installed in the unit of the answering respondent.

13. That the applicant has not brought on record any medical report indicating that the severe illness, as alleged by the applicant, has been caused due to operation of the industries. The applicant is making false and bogus statement under oath, just for personal reason as he has constructed his house recently in the area and now based on bogus claim is making an attempt to close the



industries which are operating in environmentally friendly manner.

14. That the applicant has not backed any of his allegations with proof and have made mere false statements and thus the Original Application must be dismissed with cost.
15. That I have read the contents of the reply/ counter affidavit/ response and have understood the same.

PRAYERS:

In the facts and circumstances as stated above, it is therefore, most respectfully prayed that this Hon'ble Tribunal may be graciously pleased to:-

- (i) Dismiss the Original Application being O.A. No. 49 of 2025 (EZ) titled as 'Manbodh Kumar vs The State of Bihar & Ors' filed by the applicant in so far as relates to the answering Respondents;



- (ii) Pass such other/further order(s) as this Hon'ble tribunal may deem fit and proper in the facts and circumstances of the case.

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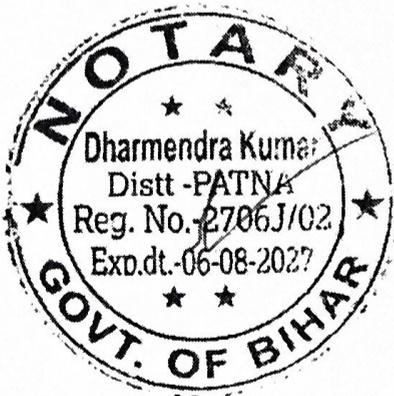
RESPONDENT No. 13

THROUGH

JAYANT KISTO
 (Advocate for the Respondent No. 13)
 Mahesh nagar, road no. 04, Patna-800024
 MOB:- 9999446310.
 EMAIL: jayantkisto@gmail.com

PLACE: PATNA

DATE: 19-08-2025.



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IN THE MATTER OF
Manbodh Kumar
_____ **Applicant.**

VERSUS

THE STATE OF BIHAR AND OTHER
_____ **RESPONDENTS.**

AFFIDAVIT

I, Nand Kumar, aged about 48 years, Son of Late Ram Kauleshwar Prasad, residing at- Shanti Bhawan, Langer Toli Lane, Nala Road, Patna- 800004, do hereby solemnly affirm and state as follows: -

1. That I am Proprietor of M/S MSB Polymer (the Respondent No. 13 herein) and I am well conversant with the facts and circumstances of the case as such I am competent to swear this affidavit.
2. That the reply/counter affidavit has ben drafted by my counsel under my instructions and the content of ~~the~~ same have been read over to me and have understood the same and no part of it is not true and nothing material has been concealed thereto.



No. 229 Date 19.08.25

VERIFICATION

Verified at Patna on 19th of Aug, 2025, that the contents of the above affidavit is true and correct to the best of my knowledge and belief. No part of it is false and nothing material has been concealed therefrom.

Notary Seal
DEPONENT PATNA

Shri. Chand Kumar
who is identified by *Shri. Pankaj*
Advocate solemnly affirmed &
declared before me
19/8/25
Dharmendra Kumar
Notary Public Patna

NOTARY
Dharmendra Kumar
Distt - PATNA
Reg. No. - 2706J/02
Exp. dt. - 06-08-2027
GOVT. OF BIHAR

I identify the Deponent Signature/Name who has signed in my presence.

P. K. Pandey
ADVOCATE Adv -
En-R-1583/08



सत्यमेव जयते

INDIA JUDICIAL³ 389
GOVERNMENT OF BIHAR
e-Court Fee

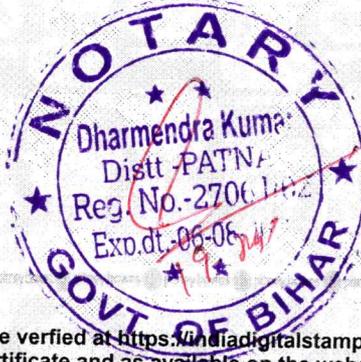


बिहार सरकार

Certificate No. : BR-JS-QWMSQJWPIAT9MUH
Certificate Issued Date & Time : 19-08-2025 13:12:53
Account Reference : NA
Description of Document : Courtfee with Litigant details
Name of Litigant : NAND KUMAR
Amount : ₹100
Amount in Words : Rupees One Hundred



BR-JS-QWMSQJWPIAT9MUH



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1. The authenticity of this certificate should be verified at <https://india.digitalstamps.pitneybowes.com/> or using Mobile app. Any discrepancy in the details on this Certificate and as available on the website/Mobile App renders it invalid.
2. The onus of checking the legitimacy is on the user of the certificate.
3. In case of any discrepancy please inform the competent Authority.

No. 229 Date 19.08.2025

Annexure-R13/A

**BIHAR STATE POLLUTION CONTROL BOARD**

PARIVESH BHAWAN, PLOT NO. NS-B/2, PALIPUTRA INDUSTRIAL AREA,

PATLIPUTRA, Patna – 800 010

Ref. No. -1923

Patna, Dated-30.6.22

DISCHARGE CONSENT ORDER

With reference to the on-line application no.- OR226N022897/6144145 dated 07.06.2022 of **M/s MSB Polymers**, At-Langer Toli Lane, P.O.-Bankipur, Dist-Patna-800004 of the unit for consent under sections 25/26 of the Water (Prevention & Control of Pollution) Act, 1974, he/they is/are granted consent to bring into use his/their new/altered/existing outlet(s) for discharge of trade effluent and/or domestic sewage of the plant [Single use plastic cutlery items-Glass, Cups & Plates (187.5 MT/year) from the biodegradable raw materials, PET Bottles (187.5 MT/year), Food packaging items (187.5 MT/year) and PLA (Poly Lactic Acid) coated paper cups, Plates, Glass & Bowls (187.5 MT/year)] with D.G. Set-5.5 kVAx1 At Dadi Maa Biscuit factory Road, Nasriganj, P.O.-Bata, P.S.-Danapur, Dist-Patna-800012 for the period of five years from the date of issue subject to the following conditions:-

1. That, he/they shall not make any alteration, addition, deletion or modification in the plant without the prior clearance from the Board and shall also abide by the obligations under sections 24, 31 and 33A of the Water (Prevention & Control of Pollution) Act, 1974 and further shall extend co-operation to the Board in performing its functions entrusted under sections 20, 21, 23, 30 and 32 of the Act;
2. That, he /they shall comply with the requirements of Rule 14 of the Environment (Protection) Rules, 1986; Rules 4, 5, 7, 9, 10 and 11 of the Hazardous And Other Wastes (Management and Transboundary Movement) Rules, 2016, Rules 4, 5, 7, 8, 10, 11, 12, 13, 15 and 18 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989; and the provisions of the Public Liability Insurance Act, 1991 (whichever is applicable);
3. That, he/they shall monitor his/their effluent(s) regularly and maintain its quality in conformity with Board's standards and shall produce its proof, as and when asked for;
4. That, he/they shall submit application for consent again 30 days before the expiration of the period of consent or within 30 days from the date of receipt of this order, whichever is applicable;
5. That, the unit shall not discharge any effluent outside the plant premises and maintain zero liquid discharge (ZLD);
6. That, they shall re-use treated effluent (if any) to maintain Zero Discharge from the plant premises and water consumption shall be reduced by adopting 3 R's (reduce, reuse and recycle) concept;
7. That, they shall obtain prior permission from CGWA for installation of bore well and abstraction of groundwater;
8. That, water meter conforming to ISO standards shall be installed at the inlet point of water uptake as well as at all necessary points to monitor the daily water consumption and a log book shall be maintained in this regard. Use of water efficient devices/fixtures and appliance should be promoted;
9. That, they shall obtain registration under the Plastic Waste Management Rules, 2016 as amended 2022 before commencement of production;
10. That, they shall obtain certificate from the Central Pollution Control Board before marketing and selling;
11. That, they shall not sell out raw materials to other units;
12. That, they shall obtain certificate for compostability of raw material of compostable plastic before commencement of production of compostable SUP items;

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13. That, they shall not produce any banned plastic items as notified by the Central Govt. or the State Govt.;
 14. That, they shall comply with the provisions (whichever applicable) of the Solid Waste Management Rules, 2016. Separate wet and dry bins must be provided and segregation of dry waste (in blue bin), wet waste (in green bin) and domestic hazardous waste (in black bin) must be ensure; wet waste must be composted inside the premises and dry & domestic hazardous waste shall be handed over to the local body. Non-biodegradable waste and dry waste like rejected corrugated cardboard; waste paper etc may be handed over to the recyclers registered with Bihar State Pollution Control Board;
 15. That they shall ensure that the solid waste generated is not thrown, burnt or buried on streets, open public spaces outside the premises or in the drain or water bodies;
 16. That, the environmental statement for each financial year ending 31st Sept. in Form-V as is amended to be submitted by the proponent to the Board as prescribed in the Environment (Protection) Rules, 1986;
 17. That, they shall make provisions for display of data outside main factory gate about quantity and quality of water discharge and air emission along with solid waste generated within the factory premises;
 18. That, the compliance report of CTO conditions shall be submitted to the Board quarterly;
 19. That, notwithstanding any thing stated above, the applicant unit shall abide by all the provisions of the environmental laws including policies and guidelines made there under; and
 20. That, this CTO is granted on the basis of undertaking/document uploaded/submitted by the applicant and it is subject to the condition that in the event of any information/documents submitted by the proponent are found false or misleading at any stage, the CTO granted, shall be revoked and legal action shall be initiated.

To
Sri Nand Kumar, Proprietor,
M/s MSB Polymers,
At-Langer Toli Lane,
P.O.-Bankipur,
Dist-Patna-800004.


(S. Chandrasekar)
Member Secretary
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BIHAR STATE POLLUTION CONTROL BOARD

PARIVESH BHAWAN, PLOT NO. NS-B/2, PALIPUTRA INDUSTRIAL AREA,
PATLIPUTRA, Patna – 800 010

Ref. No. - 1924

Patna, dated- 30.6.22

EMISSION CONSENT ORDER

With reference to the on-line application ID-OR226N022897/6144145 dated 07.06.2022 of **M/s MSB Polymers**, At-Langer Toli Lane, P.O.-Bankipur, Dist-Patna-800004 for consent under sections 21 of the Air (Prevention & Control of Pollution) Act, 1981, he/they is/are granted consent to operate his/their plant [Single use plastic cutlery items-Glass, Cups & Plates (187.5 MT/year) from the biodegradable raw materials, PET Bottles (187.5 MT/year), Food packaging items (187.5 MT/year) and PLA (Poly Lactic Acid) coated paper cups, Plates, Glass & Bowls (187.5 MT/year)] with D.G. Set-5.5 kVAx1 At Dadi Maa Biscuit factory Road, Nasrganj, P.O.-Bata, P.S.-Danapur, Dist-Patna-800012 for the period of five years from the date of issue with the following conditions:-

1. That, he/they shall not make any alteration, addition, deletion or modification in the plant without the prior clearance from the Board and shall also abide by the obligations under sections 22, 23 and 31A of the Air (Prevention & Control of Pollution) Act, 1981 and further shall extend co-operation to the Board in performing its functions entrusted under sections 24, 25 and 26 of the Act ;
2. That, he /they shall comply with the requirements of Rule 14 of the Environment (Protection) Rules, 1986; Rules 4, 5, 7, 9, 10 and 11 of the Hazardous And Other Wastes (Management and Transboundary Movement) Rules, 2016; Rules 4, 5, 7, 8, 10, 11, 12, 13, 15, 17 and 18 of the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989; and the provisions of the Public Liability Insurance Act, 1991 (whichever is applicable);
3. That, he/they shall monitor his/their emission(s) and the ambient air quality from representative point regularly and shall maintain its quality in conformity with Board's standards and shall produce its proof, as and when asked for;
4. That, he/they shall submit application for consent before 30 days before the date of expiration of the consent or within 30 days from the date of receipt of this order, whichever is applicable;
5. That, they shall obtain registration under the Plastic Waste Management Rules, 2016 as amended 2022 before commencement of production;
6. That, they shall obtain certificate from the Central Pollution Control Board before marketing and selling;
7. That, they shall not sell out raw materials to other units;
8. That, they shall obtain certificate for compostability of raw material of compostable plastic before commencement of production of compostable SUP items;
9. That, they shall not produce any banned plastic items as notified by the Central Govt. or the State Govt.;
10. That, diesel generating sets (DG Sets), as source of backup power should be provided with an integral acoustic enclosure and the maximum permissible sound pressure level for new D.G. set shall be 75 dB(A) at 1 meter from the enclosure surface. The height of exhaust of DG sets should be as: Exhaust Stack Height formula:- (Ht of Building in meter + 0.2√KVA) m; it should be installed on pucca base with anti vibration pads;
11. That, they shall ensure all possible measures to be implemented to control noise pollution and the ambient noise levels should conform to the standards prescribed under the Noise Pollution (Regulation and Control) Rules, 2000, as amended to date viz. 75 dB(A) during day time and 70 dB (A) during night time;

12. That, they shall comply with the provisions (whichever applicable) of the Solid Waste Management Rules, 2016. Separate wet and dry bins must be provided and segregation of dry (in blue bin), wet (in green bin) and domestic hazardous waste (in black bin) must be ensure; wet waste must be composted inside the premises and dry & domestic hazardous waste shall be handed over to the local body. Non-biodegradable waste and dry waste like rejected corrugated cardboard, waste paper etc may be handed over to the recyclers registered with Bihar State Pollution Control Board;
13. That, tree plantation in vacant space of the campus shall be done to develop as green belt and to control ecology of area surrounding the unit;
14. That, the environmental statement for each financial year ending 31st Sept. in Form-V as is amended to be submitted by the proponent to the Board as prescribed in the Environment (Protection) Rules, 1986;
15. That, they shall make provisions for display of data outside main factory gate about quantity and quality of water discharge and air emission along with solid waste generated within the factory premises;
16. That, the compliance report of CTO conditions shall be submitted to the Board quarterly;
17. That, notwithstanding any thing stated above, the applicant unit shall abide by all the provisions of the environmental laws including policies and guidelines made there under; and
18. That, this CTO is granted on the basis of undertaking up-loaded by the applicant and it is subject to the condition that in the event of any information/documents submitted by the proponent are found false or misleading at any stage, the CTO granted, shall be revoked and legal action shall be initiated.

To
Sri Nand Kumar, Proprietor,
M/s MSB Polymers,
At-Langer Toli Lane,
P.O.-Bankipur,
Dist-Patna-800004.


(S. Chandrasekar)
Member Secretary
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**Bihar Pollution Control Board**

Parivesh Bhawan, Plot No. NS-B/2
Patliputra Industrial Area, Patliputra,
Patna-800023, Bihar

Regn. No .
PR-15-BIH-09-AQDPK8144L-22

Date:
15-09-2022 01:31 PM

REGISTRATION CERTIFICATE FOR PRODUCER

(Under Rule-13(2) of the Plastic Waste Management Rules, 2016, as amended)

To,
**MSB POLYMERS(Legal
Name)**
(Trade Name: **MSB
POLYMERS**),
Biscuits Factory Road Nasri
Ganj Industrial Area Nasri
Ganj Digha Danapur

With reference to the application dated **26-08-2022** regarding registration as a **Producer**, this is to inform that your application has been processed and found in order. Now, therefore, Bihar Pollution Control Board is pleased to grant the registration in favour of **MSB POLYMERS**, vide registered office address **Biscuits Factory Road Nasri Ganj Industrial Area Nasri Ganj Digha Danapur**, as a Producer, for disposal of MLP & other plastic waste generated due to their products as per the EPR Action Plan given below:

Sl. No	Financial Year	2022-23			
	State/UT	Cat-I	Cat-II	Cat-III	Cat-IV
1	BIHAR	0.0000	43.7500	0.0000	0.0000
TOTAL		0.0000	43.7500	0.0000	0.0000
Grand Total		43.7500			

This certificate of registration shall be valid for a period of **One Year** from the date of issue of the letter unless revoked, suspended or cancelled. The Registration is granted subject to the following terms & conditions: -

1. The Producer shall fulfil the categorize EPR Targets for the year 2022-23 as specified in the above table. For the subsequent years, EPR Target shall



Signed
by: Arun Kumar
Date:
2022.09.15
13:32:48
+05:30

calculated based on the information provided in the Annual report, the format of which shall be specified by CPCB.

2. The Producer shall provide certificate only from registered plastic waste processors as evidence of fulfilling their EPR obligation. The PIBO can meet the EPR obligation under a category by providing EPR certificates from other PIBOs of the same category.
3. Exchange of EPR credit between PIBOs and Plastic Waste Processors (PWP) to be done as per mechanism provided by CPCB.
4. The Producer shall file annual return of fulfilling of EPR obligation as per targets given above in the proforma prescribed by CPCB by June 30 of the next financial year. The information related to fulfillment of EPR obligations and annual report to be filed on the centralized EPR portal developed by CPCB for the purpose.
5. Every Producer shall maintain a record of details of the person engaged in supply of plastic used as raw material to manufacture carry bags or plastic sheet or like or cover made of plastic sheet or multi-layered packaging.
6. The Producer shall pay Annual fee for processing of Returns as per Guidelines by CPCB.
7. The Environment Compensation, as applicable, shall be levied by CPCB/SPCB/PCC on PIBO the with respect to non-fulfillment of their Extended Producer Responsibility targets, responsibilities and obligations as per Guidelines specified by CPCB.
8. An application for the renewal of a Registration shall be made at 90 days prior to expire of validity, along with the necessary information & documents as per the Guidelines issued by the MoEF&CC and CPCB from time to time
9. The Producer shall not deal with any entity not registered through on-line centralized portal developed by Central Pollution Control Board.
10. The Producer shall not engage in manufacture, stocking, distribution, selling of banned SUP items as listed in Amendment to PWM Rules dated August 12, 2021.



11. In case, it is found or determined that any PIBO registered on the on-line portal has provided false information or has willfully concealed information or there is any irregularity or deviation from the conditions stipulated while obtaining registration under Extended Producer Responsibility guidelines, then the registration of such an entity would be revoked for a one - year period after giving an opportunity to be heard. The entities whose registration has been revoked shall not be able to register afresh for the period of revocation.
12. The Producer should ensure compliance with provisions of the PWM Rules, 2016, as amended. Action, as deemed fit, including revocation of registration, closure of unit, levying Environmental Compensation charges, shall be taken against violators of PWM Rules.
13. Bihar Pollution Control Board reserves the right to take such action as deemed fit under Environment (Protection) Act, 1986 for violation of PWM Rules, 2016, as amended, if any, by the concerned PIBO for the period prior to grant of registration.

Terms and Conditions :- Special Conditions :-

1. The unit shall comply all the provisions of the Plastic Waste Management Rules, 2016 as amended thereafter, including its Schedules and related Guidelines, Standard Operating Procedures (SOPs) issued from time to time in this regard.
2. The unit shall obtain certificate from the Central Pollution Control Board, Delhi before the marketing of compostable or biodegradable products/ items.
3. The unit shall obtain test certificate for the compostability or biodegradability of their products from the authorised laboratory as specified in the Plastic Waste Management Rules, 2016 as amended thereafter.
4. The manufacturers producing Plastic packaging shall register as producer on EPR Portal. He shall fulfil his EPR liability as per notified EPR Guidelines in case final testing of biodegradability as per IS/ISO 17899:2022 fails.
5. The Single Use Plastic item (Compostable / Biodegradable) producing manufacturers shall provide monthly details of productions and in case the samples fails, Environmental Compensation shall be levied based upon polluter pays principle for the intervening period.
6. Each plastic carry bag or commodities or both and multi-layered packaging shall have the information related to name and certificate number of manufacturer [Rule 4(h)] in case of carry bags or commodities or both made from compostable plastic and biodegradable plastics printed in English on the bag in accordance with 11(1) of PWM Rules.
7. In addition, the manufacturer shall generate QR code based on the details provided in the certificate issued by CPCB and QR code shall be provided on each of the carry bag or commodities or both manufactured at the certified unit. The details of the QR code (email/password, Name, plant address, CPCB certificate no. etc.) shall be shared with the SPCB/PCC/CPCB.
8. Field verification of the units shall be carried out by SPCB/PCC. Random checks of consignments in case of import of biodegradable plastics to be carried out by the concerned authorities. The Test-Fee shall be paid/bear by the concerned unit, under inspection/ verification.
9. The certificate issued by CPCB shall be valid unless it is revoked for violation of



conditions stipulated in the Certificate. However, if there is a change in raw material/ production process or product, fresh application shall be filed to CPCB for issuing of fresh certificate. 10. The unit shall not manufacture any type of Plastic Carry Bags of any thickness or sizes from virgin or recycled plastic or petro-based plastic or banned/prohibited by Central Government/ State Government/ Central Pollution Control Board/ Bihar State Pollution Control Board/ any authorities under the legal provisions to do so. 11. The unit shall not manufacture any type of Single Use Plastic or any plastic items which is banned under any act/ rule/ bye-laws/ regulations/ notification/ office order under a legal authority to do so. 12. The unit shall not manufacture any sheet or like, packaging item/ multilayer packaging items/ any such products less than 50 micron in thickness from petro-based plastic materials. 13. The unit shall not sell or provide or arrange plastic (virgin or recycled), Compostable or Biodegradable material to be used as raw material to any Producer/ Brand Owner not having valid registration from the concerned State Pollution Control Board or Pollution Control Committee or registration issued through centralised EPR portal of the Central Pollution Control Board. 14. The unit shall prepare and submit a Quarterly Report for its raw material procurement to the Bihar State Pollution Control Board and it shall be uploaded on centralised EPR portal of the Central Pollution Control Board by the 30st July, of every year. 15. The unit shall have adequate fire fighting system and obtain approval from the concerned Fire Station of the locality. 16. The Unit shall not use ground water in the industrial use without the No Objection Certificate (NOC), if applicable, failing which Environmental Compensation shall be imposed against the Proponent or Unit 17. The unit shall obtain certificate/authorization from Central Ground Water Board for the extraction of Ground Water, if applicable. 18. The unit shall obtain a fresh Consent to Establish, Consent to Operate, Registration under EPR of PWM or any authorization/registration under the provisions of law as applicable in case of shifting, alteration of technology/ raw material/ products/ production capacity/ production process. 19. The unit shall maintain sound level, effluent quality, air quality of the premises as prescribed. 20. The registration granted shall have a validity for one/ three year or co-terminus with the validity of the Consent to Operate, whichever is earlier.

Scientist





Certificate No.: CPCB/MSB Polymers/Bihar/292

Dated:22.05.2023

To,

M/s MSB Polymers

Dadi Maa Biscuit Factory Road, Nasri Ganj,

PO - Bata, PS - Danapur, Patna - 800012, Bihar, India

Sub: Provisional Certificate to manufacturer for Manufacturing / Selling of Compostable Carry Bags & Commodities.

With reference to the application no. **MSB Polymers/Bihar/292 dated 22 May 2023** this is to certify that **M/s. MSB Polymers** plant located at **Dadi Maa Biscuit Factory Road, Nasri Ganj, PO - Bata, PS - Danapur, Patna - 800012, Bihar, India** is fulfilling the criteria as per revised Standard Operating Procedure (SOP) for issuing certificate as per the provisions '4(h)'&'11(c)' of Plastic Waste Management Rules, 2018, for manufacturing and selling of compostable carry bags and commodities in Indian Market as '**MANUFACTURER**'.

Certificate for manufacturing and selling of compostable plastic bags and commodities in Indian market is hereby issued to **M/s. MSB Polymers** plant located at **Dadi Maa Biscuit Factory Road, Nasri Ganj, PO - Bata, PS - Danapur, Patna - 800012, Bihar, India** as '**MANUFACTURER**' with the following conditions:

- i. The end product "**Compostable plastics and commodities**" shall be manufactured using the raw materials "**Compostable starch granules, PLA, Bio degradable resin**" and following the production process (**Annexure-I**)
- ii. Each carrybags and commodities made from compostable material or plastic shall bear a label "**COMPOSTABLE**" IS/ISO:17088 titled as Specifications for "Compostable Plastic" in **English & regional language**. Each carrybags and commodities shall also have printed code and Certificate Number of "**MANUFACTURER**" as given above.
- iii. The manufacturer shall generate QR code based on the details (Name, plant address, CPCB certificate no. etc.) provided in the certificate issued by CPCB and QR code shall be provided on each of the carry bags and commodities manufactured at the certified unit. The "verifiable" details of the QR code shall be shared with the SPCB/PCC/CPCB within one month of issue of this Certificate.
- iv. The Manufacturer shall provide six-monthly report giving details of raw material procurement and product sale to SPCB/PCC/CPCB as per the prescribed format.
- v. The "Manufacturer" shall comply with provisions of PWM Rules/ Guidelines issued from time to time by the Ministry of Environment, Forest & Climate Change or Central Pollution Control Board.

Contd.....2

'परिवेश भवन' पर्वी अर्जुन नगर, दिल्ली-110032

Parivesh Bhawan, East Arjun Nagar, Delhi-110032

दूरभाष/Tel : 43102030, 22305792, वेबसाइट/Website : www.cpcb.nic.in

-2-

- vi. If the certified Manufacturer is found non-complying with the provisions of the PWM Rules, 2018, the Certificate shall stand cancelled.
- vii. The manufacturer shall submit the complete test report of the sample, including seed germination and heavy metal analysis test (after 180 days) as per Indian Standard IS/ISO:17088 (as amended time to time) from CIPET or any other CPCB recognized Government laboratory having adequate testing facility for issuing Final Certificate, failing which, the Provisional Certificate shall stand cancelled.
- viii. The provisional certificate is valid for a period of six months from the date of issue of certificate by CPCB extendable by six months subject to the condition that the reasons for seeking extension as cited by the manufacturer are found valid by CPCB



(Divya Sinha)

Director & I/c UPC-II

दिव्या सिन्हा / Divya Sinha

वैज्ञानिक 'एफ' / Scientist F

केंद्रीय प्रदूषण नियंत्रण बोर्ड

Central Pollution Control Board

(पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, भारत सरकार)

(Mo Environment, Forest & Climate Change, Govt. of India)

परिवेश नवन, पूर्वी अर्जुन नगर, दिल्ली-110032

Parvash Bhawan, East Arjun Nagar, Delhi-110032

सिपेट : एस. ए. आर. पि.-पॉलीमेरिक, मटेरियल में अत्याधुनिक अनुसंधान हेतु प्रयोगशाला
रसायन एवं पेट्रोरसायन विभाग, रसायन एवं उर्वरक मंत्रालय, भारत सरकार
बी/२५, सि.एन.आई.कॉम्प्लेक्स, पटिआ, भुवनेश्वर-751024, ओडिशा

CIPET : SARP - LABORATORY FOR ADVANCED RESEARCH IN POLYMERIC MATERIALS



Dept. of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India

B/25, C.N.I. Complex, Patia, Bhubaneswar-751 024, Odisha

Ph : 0674 - 2742852, 2740173, Fax : 0674 - 2740463

E-mail : larpm@cipet.gov.in, Web : www.larpm.gov.in



INTERIM REPORT

CIPET/SARP-LARPM-IR/MP/155

INTERIM REPORT NO : 00626

Date : 25.08.2022

To,
M/s. MSB Polymers
Biscuits Factory Road, Nasri Ganj Industrial Area,
Nasri Ganj Digha Danapur, Patna, Bihar - 800012

Sample details (as declared by the party): "BIO FLEX (PLA COMPOUND)

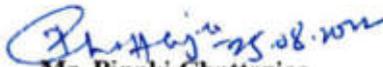
Date of receive of sample:-17.01.2022

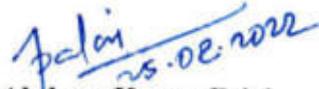
Date of Initiation of test:-21.02.2022

Sl. No.	Property	Test method / Standard	Unit	Results Obtained	Specified Requirements
1.	Material Identification	FTIR / DSC	--	Polylactic Acid (PLA) based material	---
2.	Disintegration (Dry mass remains in 2mm sieve after 84 days)	Cl. 6.2 of ISO 17088-2012 , IS/ISO 17088-2008	%	7.15	Not more than 10%
3.	Ultimate Aerobic Biodegradation (with reference to 100% degradation of positive reference)	Cl. 6.3 of ISO 17088- 2012 , IS/ISO 17088-2008	%	90.87 (At the end of 180 days)	> 90% (At the end of the test period not more than 180 days)

Comments:- Submitted sample "BIO FLEX (PLA COMPOUND)" -as stated by the party) of M/s. MSB Polymers complies with the requirements of cl. 6.2 & 6.3 of ISO 17088-2012 , IS/ISO 17088-2008.

- Note:**
1. The submitted sample is exposed under controlled compost condition as per ISO 14855-1 and at the end of **180** days, the cumulative biodegradation is estimated as **90.87** % with reference to the degradation of the cellulose.
 2. The following tests are under progress as per the standard ISO 17088-2012 / IS/ISO 17088:2008
 - a. Heavy metal analysis as per Cl. no. 6.4.1.
 - b. Seed germination as per Cl. no. 6.4.4.
 3. The Test Report will be issued after the completion of all the tests.
 4. The interim report is only valid till the issue of Test Report.


Mr. Pinaki Chatterjee
AUTHORISED SIGNATORY


Dr. Akshaya Kumar Palai
AUTHORISED SIGNATORY

401
सिपेट : एस. ए. आर. पि.-पॉलीमेरीक, मटेरियल में अत्याधुनिक अनुसंधान हेतु प्रयोगशाला
रसायन एवं पेट्रोरसायन विभाग, रसायन एवं उर्वरक प्रयोगशाला, भारत सरकार
बी/ २५, सि.एन.आई. कॉम्प्लेक्स, पटिआ, भुवनेश्वर-751024, ओडिशा

CIPET : SARP - LABORATORY FOR ADVANCED RESEARCH IN POLYMERIC MATERIALS



CIPET सिपेट
under perform - practice - Practice

Dept. of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India

B/25, C.N.I. Complex, Patia, Bhubaneswar-751 024, Odisha

Ph : 0674 - 2742852, 2740173, Fax : 0674 - 2740463

E-mail : larpm@cipet.gov.in, Web : www.larpm.gov.in

LARPM/CIPET/Testing/2022-23/

Date- 27.10.2022

To,
Mr. Prem Kumar
M/s. MSB Polymers
Biscuits Factory Road, Nasri Ganj Industrial Area,
Nasri Ganj Digha Danapur, Patna, Bihar- 800012
Mob:7004105943, 9304834959

Sub -Test Report -Reg.

Dear Sir,

Ref No: 1) Email dated 08.12.2021, letter & SSF dated 11.01.2022
2) Our Work Order No.: LARPM/BBS./2021-22/155 dated 17.01.2022

With reference to the above cited subject, please find enclosed herewith **Test Report No. 00695**
dated 27.10.2022.

Kindly acknowledge the receipt of the same.

Thanks & Regards,

Director & Head
(Principal Scientist)

Encl: As above

सिपेट : एस. ए. आर. पि.-पॉलीमेरिक, मटेरियल में अत्याधुनिक अनुसंधान हेतु प्रयोगशाला
रसायन एवं पेट्रोसायन विभाग, रसायन एवं उर्वरक मंत्रालय, भारत सरकार
बी/२५, सि.एन.आई.कॉम्प्लेक्स, पटिआ, भुवनेश्वर-751024, ओडिशा

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CIPET : SARP - LABORATORY FOR ADVANCED RESEARCH IN POLYMERIC MATERIALS



Dept. of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India
B/25, C.N.I. Complex, Patia, Bhubaneswar-751 024, Odisha
Ph : 0674 - 2742852, 2740173, Fax : 0674 - 2740463
E-mail : larpm@cipet.gov.in, Web : www.larpm.gov.in

CERTIFICATE OF ANALYSIS AS PER ISO 17088:2021

LARPM/CIPET/Testing/2022-23/

Date-27.10.2022

To,
M/s. MSB Polymers
Biscuits Factory Road, Nasri Ganj Industrial Area,
Nasri Ganj Digha Danapur, Patna, Bihar- 800012

Sub -Test Report-Reg.

Dear Sir,

Ref No : 1) Email dated 08.12.2021, letter & SSF dated 11.01.2022
2) Our Work Order No.: LARPM/BBS./2021-22/155 dated 17.01.2022

With reference to the above, the submitted sample was analyzed as per ISO 17088:2021. The summary detail of testing & analysis is given below:

Company Name & Address	: M/s. MSB Polymers Biscuits Factory Road, Nasri Ganj Industrial Area, Nasri Ganj Digha Danapur, Patna, Bihar- 800012
Sample Details	: "BIO FLEX (PLA COMPOUND) - as stated by the party
Test Report No	: 00695 & dated 27.10.2022
Date of Receipt of sample	: 17.01.2022
Date of Initiation	: 21.02.2022
Date of Completion	: 26.10.2022
Percentage of Compostability In 180 days	: 90.87
Requirement of Compostability in 180 days as per ISO 17088:2021	: 90 %

The sample submitted by M/s. MSB Polymers is compostable and the percentage of Compostability in 180 days reported vide test report No. 00695 is 90.87%.

The submitted sample also complies with the terms of seed germination and disintegration as per ISO 17088:2021.

Earthworm toxicity test is under progress. Separate report will be issued after completion of the test.

Thanks & Regards,


Quality Manager

Encl : Analysis Report

सिपेट : एस. ए. आर. पि.-पॉलीमेरीक, मटेरियल में अत्याधुनिक अनुसंधान हेतु प्रयोगशाला
 रसायन एवं पेट्रोरसायन विभाग, रसायन एवं उर्वरक मंत्रालय, भारत सरकार
 बी/२५, सि.एन.आई.कॉम्प्लेक्स, पटिआ, भुवनेश्वर-751024, ओडिशा

CIPET : SARP - LABORATORY FOR ADVANCED RESEARCH IN POLYMERIC MATERIALS



Dept. of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India
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 E-mail : larpm@cipet.gov.in, Web : www.larpm.gov.in



Page : 01 of 03

ANALYSIS REPORT

Report No. : 00695

Date : 27.10.2022

Issued to

M/s. MSB Polymers

Biscuits Factory Road, Nasri Ganj Industrial Area,

Nasri Ganj Digha Danapur, Patna, Bihar- 800012

Customer Ref. No. & Date : Email dated 08.12.2021, letter & SSF dated 11.01.2022

Work order Ref. No. & Date : LARPM/BBS./2021-22/155 dated 17.01.2022

As per Standard : As per part C

PART A: PARTICULARS OF SAMPLE SUBMITTED

- | | |
|--|---|
| a) Name of the Sample | : BIO FLEX (PLA COMPOUND)-as stated by the party |
| b) Grade/verity/Type/Size/Class etc. | : Thermoformed products(Glass Sample)
- as stated & supplied by the party. |
| c) Code No. | : Nil. |
| d) Quantity (pcs./mtr/gm/nos) | : 1 Kg |
| e) Mode of packing
(Sealed carton/polypouch/container or not) | : Packed in Carton. |
| f) Date of receipt of sample | : 17.01.2022 |
| g) Date of Performance of test | : 21.02.2022-26.10.2022 |
| 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 |


 Mr. Pinaki Chatterjee

AUTHORISED SIGNATORY


 Dr. Akshaya Kumar Palai
 27.10.2022
 AUTHORIZED SIGNATORY

CIPET : SARP - LABORATORY FOR ADVANCED RESEARCH IN POLYMERIC MATERIALS



Dept. of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India
B/25, C.N.I. Complex, Patia, Bhubaneswar-751 024, Odisha
Ph : 0674 - 2742852, 2740173, Fax : 0674 - 2740463
E-mail : larpm@cipet.gov.in, Web : www.larpm.gov.in



Page : 02 of 03

PART C: TEST RESULTS

ANALYSIS REPORT

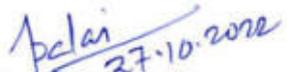
Report No : 00695

Date : 27.10.2022

Sl. No	Name of the Test	Test Method/Standard	Unit	Results Obtained	Specified Requirements
Sample Details: "BIO FLEX (PLA COMPOUND)" - as stated by the party					
1.	Material Identification	FTIR/DSC	--	Polylactic Acid (PLA) based material	---
2.	Disintegration (Dry mass remains in 2 mm sieve after 84 days)	ISO 17088:2021	%	7.15	Not more than 10%
3.	Ultimate aerobic Biodegradation (with reference to 100% degradation of positive reference)	ISO 17088:2021	%	90.87 (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) % Seed Emergence b) Dicotyledon (Mungo) % Seed Emergence	ISO 17088:2021	%	94.0 96.70	> 90 > 90

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


Mr. Pinaki Chatterjee
AUTHORISED SIGNATORY


Dr. Akshaya Kumar Palai
AUTHORISED SIGNATORY

सिपेट : एस. ए. आर. पि.-पॉलीमेरिक, मटेरियल में अत्याधुनिक अनुसंधान हेतु प्रयोगशाला
 रसायन एवं पेट्रोसायन विभाग, रसायन एवं उर्वरक मंत्रालय, भारत सरकार
 बी/२५, सि.एन.आई.कॉम्प्लेक्स, पटिआ, भुवनेश्वर-751024, ओडिशा

CIPET : SARP - LABORATORY FOR ADVANCED RESEARCH IN POLYMERIC MATERIALS



Dept. of Chemicals & Petrochemicals, Ministry of Chemicals & Fertilizers, Govt. of India

B/25, C.N.I. Complex, Patia, Bhubaneswar-751 024, Odisha

Ph : 0674 - 2742852, 2740173, Fax : 0674 - 2740463

E-mail : larpm@cipet.gov.in, Web : www.larpm.gov.in



Page : 03 of 03

ANALYSIS REPORT

Report No.: 00695

Date : 27.10.2022

Sl. No	Name of the Test	Test Method/Standard	Unit	Results obtained	Specified Requirements(*)
5.	Heavy metals concentration(#)	ISO 17088:2021	mg/kg		
	Arsenic (As)			BDL(DL:0.006)	10
	Copper (Cu)			9.0	300
	Nickel (Ni)			BDL(DL:0.005)	50
	Zinc (Zn)			78.0	1000
	Cobalt (Co)			BDL(DL:0.004)	--
	Chromium (Cr)			24.5	50
	Molybdenum (Mo)			BDL(DL:0.005)	--
	Mercury (Hg)			BDL (DL: 0.0007)	0.15
	Cadmium (Cd)			1.0	5
	Lead (Pb)			12.0	100
	Selenium (Se)			BDL(DL:0.013)	--

Note: BDL-Below Detection Limit, DL-Detection Limit

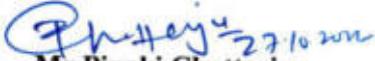
* Based on Municipal waste (Management and Handling) Rules, 2016 notified on 08th April 2016 by Ministry of Environment and Forests, Government of India. Note that concentration of metals like cobalt, molybdenum and selenium is not mentioned in the notification.

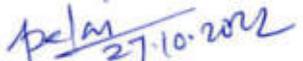
** Earthworm toxicity test is under progress. Separate report will be issued after completion of the test.

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 **


 Mr. Pinaki Chatterjee
 AUTHORISED SIGNATORY


 Dr. Akshaya Kumar Palai
 AUTHORISED SIGNATORY

OBSERVATION FOR BIODEGRADABILITY TEST AS PER ISO 17088:2021

To

M/s. MSB Polymers

Biscuits Factory Road, Nasri Ganj Industrial Area,
Nasri Ganj Digha Danapur, Patna, Bihar- 800012

Date of Initiation : 21.02.2022

Date of Completion : 26.10.2022

1. **Sample detail:** "BIO FLEX (PLA COMPOUND)" - as stated by the party.
2. **Material Identification by DSC & FTIR:** DSC & FTIR graph indicates the base material of the supplied sample is Polylactic Acid (PLA) based material.

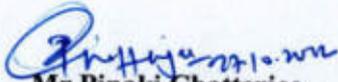
3. Observation:-

a. Conditions of reaction mixtures

Origin of compost: Livestock excreta, municipal and vegetable waste
 Reaction Temperature : 58°C (±2°C)
 Dry Solid : 53.03(%)
 Volatile Solid : 29.44(%)
 Test duration : 180 days
 Reference material : Cellulose
 Volume of reaction vessel : 3000 ml

b. pH of test medium:-

Sl. No.	Composting Vessel	pH(before)	pH(After)
1	Blank 1	7.6	7.6
2	Blank 2	7.5	7.7
3	Blank 3	7.6	7.7
4	Cellulose1	7.1	7.2
5	Cellulose2	7.3	7.3
6	Cellulose3	7.4	7.5
7	Negative 1	7.3	7.4
8	Negative 2	7.5	7.6
9	Negative3	7.6	7.7
10	Sample 1	7.4	7.5
11	Sample 2	7.5	7.7
12	Sample 3	7.3	7.4



Mr. Pinaki Chatterjee

AUTHORISED SIGNATORY



27.10.2022

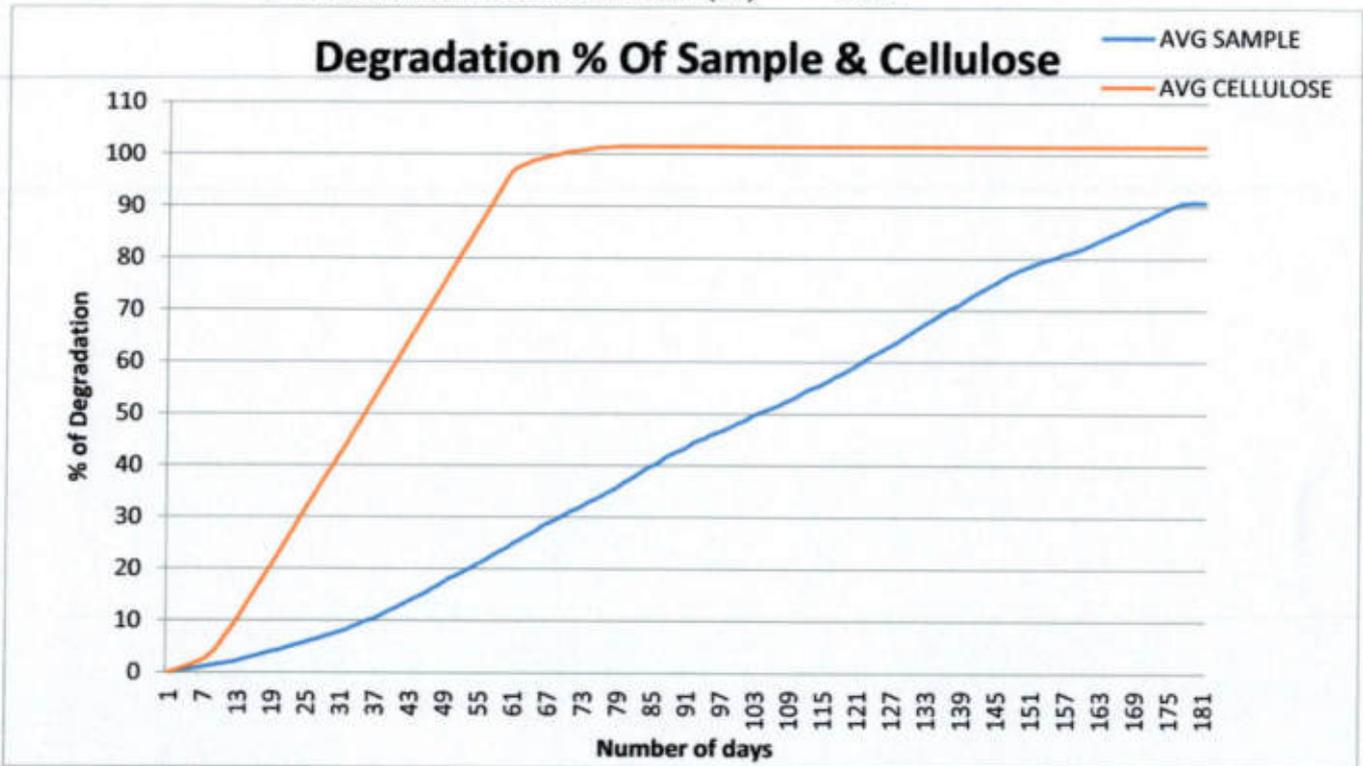
Dr. Akshaya Kumar Palai

AUTHORISED SIGNATORY

4. Result: Percentage biodegradation relative to positive reference

MEAN(%) : 90.87 %

The reference material-cellulose (%) : 100



5. Visual Observation:-

	Week 1	Week 2	Week 3	Week 4	Week 5
Structure	Glass Sample				
Moisture	Appropriate moisture Level				
Color	White	White	White	White	White
Fungal Development	None	None	None	None	None
Smell	Organic/dirt like				

Pinaki Chatterjee
27.10.2022

Mr. Pinaki Chatterjee
AUTHORISED SIGNATORY

Akshaya Kumar Palai
27.10.2022

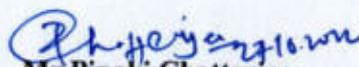
Dr. Akshaya Kumar Palai
AUTHORISED SIGNATORY

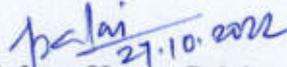
	Week 6	Week 7	Week 8	Week 9	Week 10
Structure	Glass Sample				
Moisture	Appropriate moisture Level				
Color	White	White	White	----	----
Fungal Development	None	None	None	None	None
Smell	Organic/dirt like				

	Week 11	Week 12	Week 13	Week 14	Week 15
Structure	Disintegration initiated	Disintegration observed	Disintegration observed	Disintegration observed	Disintegration observed
Moisture	Appropriate moisture Level				
Color	----	----	----	----	----
Fungal Development	None	None	None	None	None
Smell	Organic/dirt like				

	Week 16	Week 17	Week 18	Week 19	Week 20
Structure	Disintegration observed				
Moisture	Appropriate moisture Level				
Color	----	----	----	----	----
Fungal Development	None	None	None	None	None
Smell	Organic/dirt like				

	Week 21	Week 22	Week 23	Week 24	Week 25/26
Structure	Disintegration observed				
Moisture	Appropriate moisture Level				
Color	----	----	----	----	----
Fungal Development	None	None	None	None	None
Smell	Organic/dirt like				


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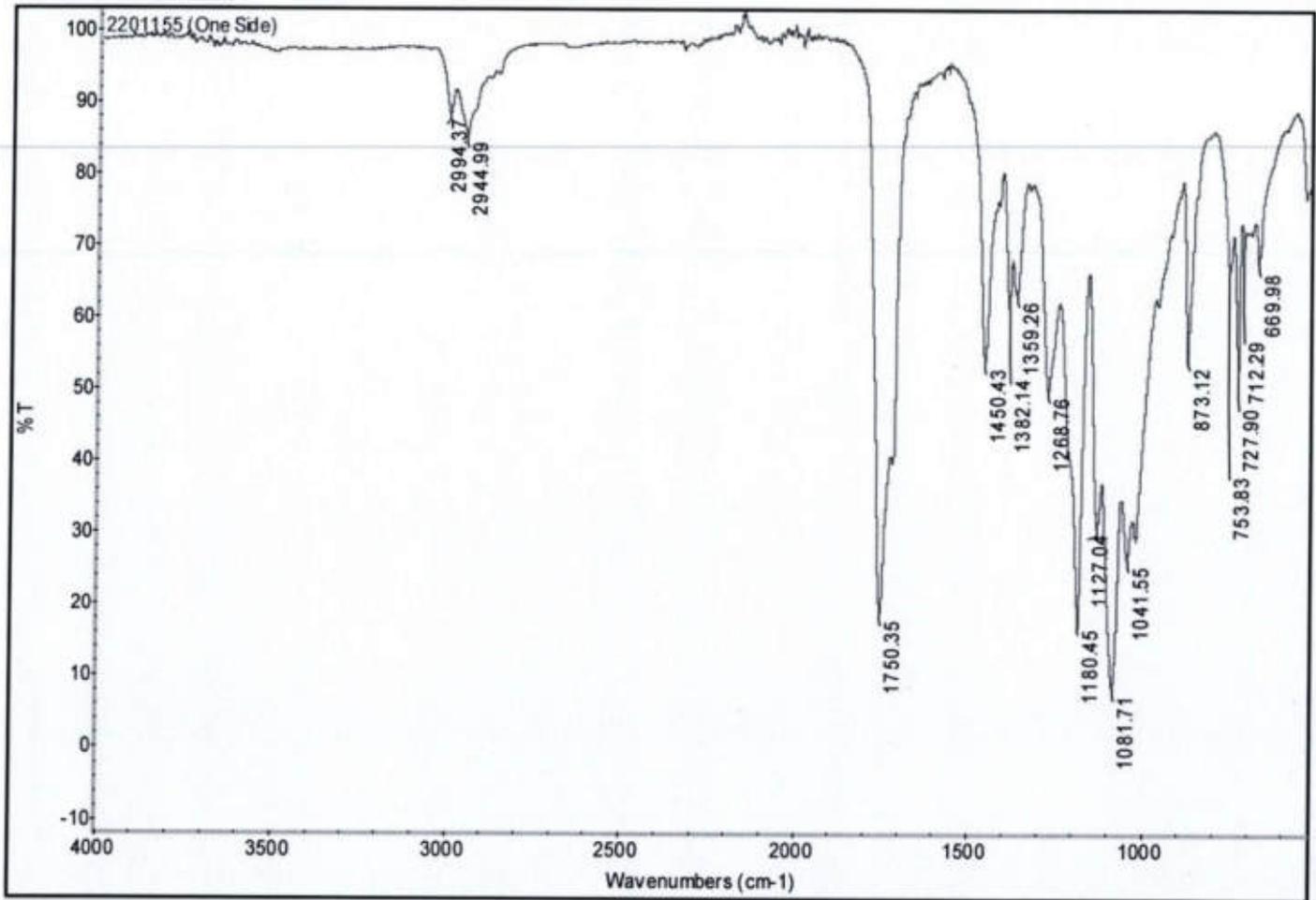

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ANALYSIS RESULT

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6.FTIR Analysis:

Wave number (cm ⁻¹)	Possible Nature of Bond
2994.37 & 2944.99	CH Stretch
1750.35	C=O Stretch
1450.43	CH Bend
1180.45 & 1081.71	C-O Stretch

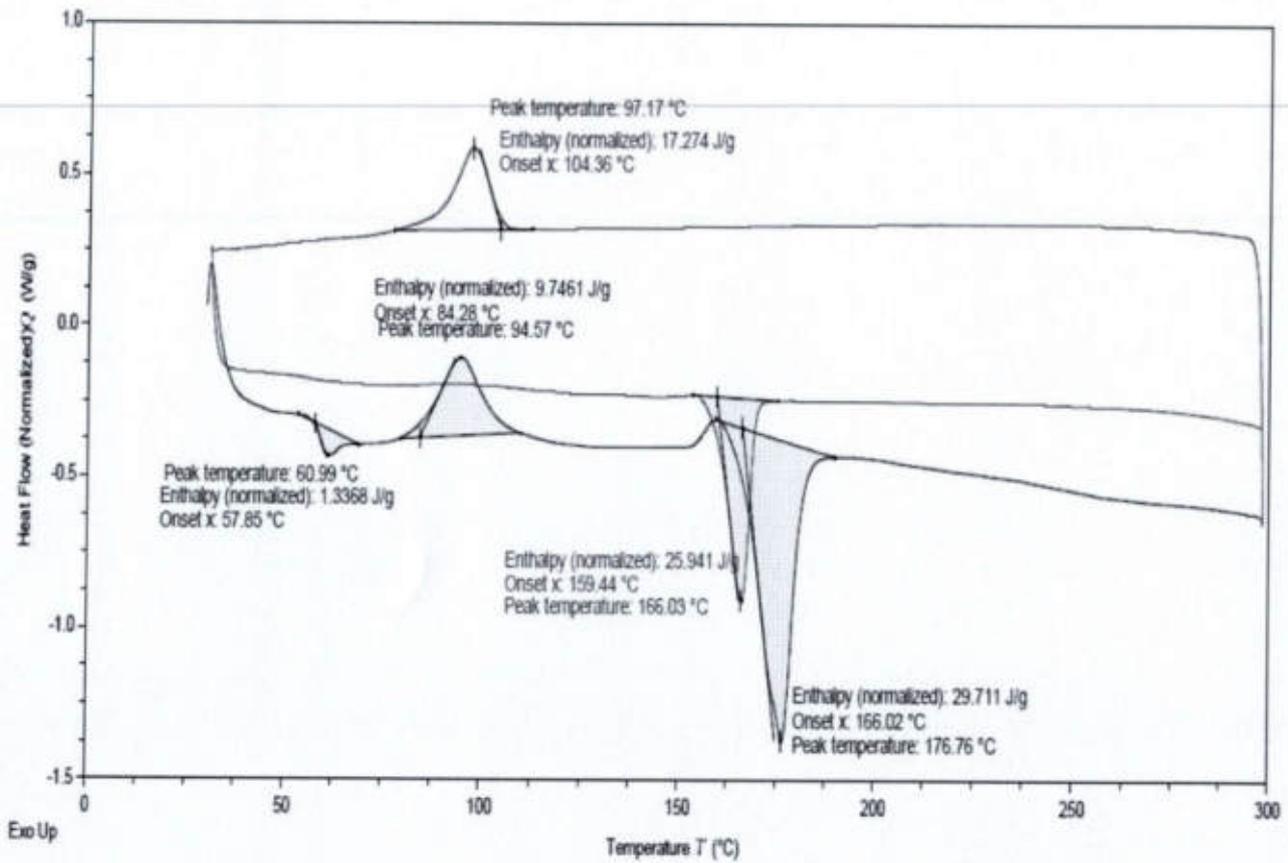
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7. DSC Analysis:-



Comment: DSC & FTIR graph indicates the base material of the supplied sample is Polylactic Acid (PLA) based material.

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8.DISINTEGRATION- AFTER 12 WEEKSBEFORE DISINTEGRATION
2201155

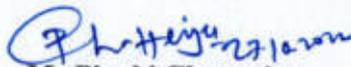
BEFORE DISINTEGRATION

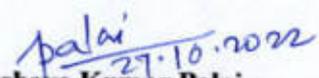
AFTER DISINTEGRATION
2201155

AFTER DISINTEGRATION

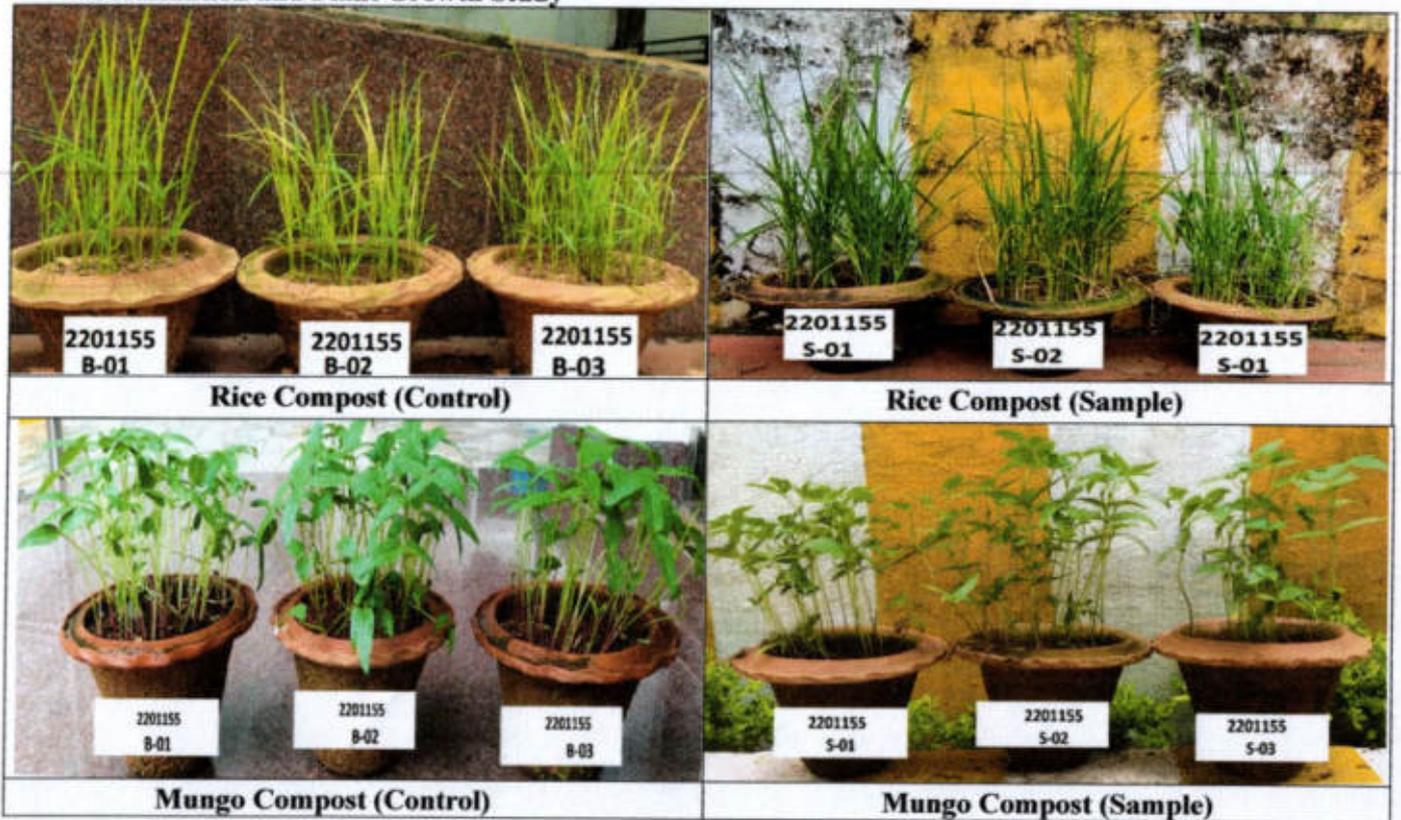
Comment:-

The disintegration of the supplied sample by passing through 2 mm sieve after 12 week in composting condition as per ISO 17088-2021 was found not more than 10% of original dry mass remain.


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9. Germination and Plant Growth Study



The percentage of seedling germination rate was found greater than 90% for both Rice and Mungo Bean.

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