The Plastic Waste Management (Amendment) Rules – 2021.

[Published in the Gazette of India, Part-II, Section-3, Sub-section (i)]
Ministry of Environment, Forest and Climate Change
Notification New Delhi, the 12th August, 2021

G.S.R 285(E).— Whereas the Plastic Waste (Management and Handling) Rules, 2011 published vide notification number S.O 249 (E), dated 4th February, 2011 by the Government of India in the erstwhile Ministry of Environment and Forests, as amended from time to time, provided a regulatory frame work for management of plastic waste generated in the country;

And whereas, to implement these rules more effectively and to give thrust on plastic waste minimization, source segregation, recycling, involving waste pickers, recyclers and waste processors in collection of plastic waste fraction either from households or any other source of its generation or intermediate material recovery facility and adopt polluter's pay principle for the sustainability of the waste management system, the Central Government reviewed the existing rules;

And whereas, in exercise of the powers conferred by sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the draft rules, namely, the Plastic Waste Management, Rules, 2015 were published by the Government of India in the Ministry of Environment, Forest and Climate Change *vide* number G.S.R. 423(E), dated the 25th May, 2015 in the Gazette of India, inviting objections and suggestions from all persons likely to be affected thereby, before the expiry of a period of sixty days from the date on which copies of the Gazette containing the said notification were made available to the public;

And Whereas copies of the said Gazette were made available to the public on the 25th May, 2015;

And Whereas the objections and suggestions received within the said period from the public in respect of the said draft rules have been duly considered by the Central Government;

NOW, Therefore, in exercise of the powers conferred by sections 3,6 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), and in supersession of the Plastic Waste (Management and Handling) Rules, 2011, except as respects things done or omitted to be done before such supersession, the Central Government hereby makes the following rules, namely:-

1. Short title and commencement - (1) These rules shall be called the "Plastic Waste Management (Amendment) Rules, 2021."



(1) Save as otherwise provided in these rules, they shall come into force on the date of their publication in the Official Gazette.

2. Application.-

- (1) These rules shall apply to every waste generator, local body, Gram Panchayat, manufacturer, Importers brand-owner, plastic waste processor (recycler, co-processor, etc.) and producer.
- (2) The rule 4 shall not apply to the export oriented units or units in special economic zones, notified by the Central Government, manufacturing their products against an order for export: Provide this exemption shall not apply to units engaged in packaging of gutkha, tobacco and pan masala and also to any surplus or rejects, left over products and the like.
- **3. Definitions.** In these rules, unless the context otherwise requires.-
- (a) "Act" means the Environment (Protection) Act, 1986 (29 of 1986);
- (ab) "Alternate Use" means of a material for a purpose other than for which it was conceived. Which is beneficial because it promotes resource efficiency";
- (b) "brand owner" means a person or company who sells any commodity under a registered brand label.
- (c) "carry bags" mean bags made from plastic material or compostable plastic material, used for the purpose of carrying or dispensing commodities which have a self carrying feature but do not include bags that constitute or form an integral part of the packaging in which goods are sealed prior to use.
- (d) "commodity" means tangible item that may be bought or sold and includes all marketable goods or wares;
- (e) "**compostable plastics**" mean plastic that undergoes degradation by biological processes during composting to yield CO₂, water, inorganic compounds and biomass at a rate consistent with other known compostable materials, excluding conventional petrobased plastics, and does not leave visible, distinguishable or toxic residue;
- (f) "consent" means the consent to establish and operate from the concerned State Pollution Control Board or Pollution Control Committee granted under the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974), and the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981);

- (g) "disintegration" means the physical breakdown of a material into very small fragments;
- (ga) "energy recovery" means energy recovery from waste that is conversion of waste material into usable heat electricity or fuel through a variety of processes including combustion, gasification, pyrolisation, anaerobic digestion and land fill gas recovery";
- (h) "extended producer's responsibility" means the responsibility of a producer for the environmentally sound management of the product until the end of its life;
- (i) "food-stuffs" mean ready to eat food products, fast food, processed or cooked food in liquid, powder, solid or semi-solid form;
- (j) "facility" means the premises used for collection, Storage, recycling, processing and disposal of plastic waste;
- (k) "importer" means a person who imports or intends to import and holds an Importer Exporter Code number, unless otherwise specifically exempted.
- (l) "institutional waste generator" means and includes occupier of the institutional buildings such as building occupied by Central Government Departments, State Government Departments, public or private sector companies, hospitals, schools, colleges, universities or other places of education, organisation, academy, hotels, restaurants, malls and shopping complexes;
- (m) "manufacturer" means and include a person or unit or agency engaged in production of plastic raw material to be used as raw material by the producer.
- (n) "multilayered packaging" means any material used or to be used for packaging and having at least one layer of plastic as the main ingredients in combination with one or more layers of materials such aspaper, paper board, polymeric materials, metalised layers or aluminium foil, either in the form of a laminate or co-extruded structure;
- (na) "Non-woven plastic bag" means Non-woven plastic bag made up of plastic sheet or web structured fabric of entangled plastic fibers or filaments (any by perforation films) boned together by mechanical or thermal or chemical means, and the "non-woven fabric" means a flat or tufted porous sheet that is made directly form plastic fibres, molten plastic or plastic films.

- (o) "plastic" means material which contains as an essential ingredient a high polymer such as polyethylene terephthalate, high density polyethylene, Vinyl, low density polyethylene, polypropylene, polystyrene resins, multi-materials like acrylonitrile butadiene styrene, polyphenylene oxide, polycarbonate, Polybutylene terephthalate;
- (p) "plastic sheet" means Plastic sheet is the sheet made of plastic;
- (q) "plastic waste" means any plastic discarded after use or after their intended use is over:
- (qa) "Plastic waste Processing" means any process by which plastic waste is handled for the purpose of reuse, recycling, co-processing or transformation unto new products",
- (r) "prescribed authority" means the authorities specified in rule 12;
- (s) "producer" means persons engaged in manufacture or import of carry bags or multilayered packaging or plastic sheets or like, and includes industries or individuals using plastic sheets or like or covers made of plastic sheets or multilayered packaging for packaging or wrapping the commodity;
- (i) "recycling" means the process of transforming segregated plastic waste into a new product or raw material for producing new products;
- (t) "registration" means registration with the State Pollution Control Board or Pollution Control Committee concerned, as the case may be;
- (u) "street vendor" shall have the same meaning as assigned to it in clause (l) of subsection (1) of Section 2 of the Street Vendors (Protection of Livelihood and Regulation of Street Vending) Act, 2014 (7 of 2014);
- (v) "local body" means urban local body with different nomenclature such as municipal corporation, municipality, nagarpalika, nagarnigam, nagarpanchayat, municipal council including notified area committee (NAC) and not limited to or any other local body constituted under the relevant statutes such as gram panchayat, where the management of plastic waste is entrusted to such agency;
- (va) "Single-use plastic commodity" mean a plastic item intended to be used for the same purpose before being disposed of or recycled",
- (vb) "Thermoset plastic" means a plastic which becomes irreversibly rigid when heated and hence cannot be remoulded into desired shape",



- (vc) "Thermoplastic" means a plastic which softens on heating and can be moulded into desired shape',
- (w) "virgin plastic" means plastic material which has not been subjected to use earlier and has also not been blended with scrap or waste;
- (x) "waste generator" means and includes every person or group of persons or institution, residential and commercial establishments including Indian Railways, Airport, Port and Harbour and Defense establishments which generate plastic waste;
- (y) "waste management" means the collection, storage, transportation reduction, re-use, recovery, recycling, composting or disposal of plastic waste in an environmentally safe manner;
- (z) "waste pickers" mean individuals or agencies, groups of individuals voluntarily engaged or authorised for picking of recyclable plastic waste.
- **4. Conditions.-** (1) The manufacture, importer stocking, import, stocking, distribution, sale and use of carry bags, plastic sheets or like, or cover made of plastic sheet and multilayered packaging, shall be subject to the following conditions, namely:-
- a) carry bags and plastic packaging shall either be in natural shade which is without any added pigments or made using only those pigments and colourants which are in conformity with Indian Standard: IS 9833:1981 titled as "List of pigments and colourants for use in plastics in contact with foodstuffs, pharmaceuticals and drinking water", as amended from time to time;
- b) Carry bags made of recycled plastic or products made of recycled plastic shall not be used for storing, carrying, dispensing or packaging ready to eat or drink food stuff';
- c) carry bag made of virgin or recycled plastic, shall not be less than fifty microns in thickness; "seventy five microns in thickness with effect from the 30th September, 2021 and one hundred and twenty (120) microns in thickness with effect from the 31st December, 2022".
- d) plastic sheet or like, which is not an integral part of multilayered packaging and cover made of plastic sheet used for packaging, wrapping the commodity shall not be less than fifty microns in thickness except where the thickness of such plastic sheets impair the functionality of the product;



- e) the manufacturer shall not sell or provide or arrange plastic to be used as raw material to a producer, not having valid registration from the concerned State Pollution Control Boards or Pollution Control Committee;
- f) sachets using plastic material shall not be used for storing, packing or selling gutkha, tobacco and pan masala;
- g) recycling of plastic waste shall conform to the Indian Standard: IS 14534:1998 titled as Guidelines for Recycling of Plastics, as amended from time to time;
- h) The provision of thickness shall not be applicable to carry bags and commodities made up of compostable plastic. Carry bags and commodities made from compostable plastics or commodities or both shall conform to the Indian Standard: IS 17088:2008 titled as Specifications for Compostable Plastics or commodities or both, as amended from time to time. The manufacturers or seller of compostable plastic carry bags or commodities or both shall obtain a certificate from the Central Pollution Control Board before marketing or selling; and
- i) plastic material, in any form including Vinyl Acetate Maleic Acid Vinyl Chloride Copolymer, shall not be used in any package for packaging gutkha, pan masala and tobacco in all forms.
- (j) non-woven plastic carry shall not be less than 60 gram Per Square Meter (GSM) with effect from the 30th September, 2021.
- (2) The manufacture, import, stocking, distribution, sale and use of following singleuse plastic, including polystyrene and expanded polystyrene, commodities shall be prohibited with effect from the 1st July, 2022:-
 - (a) ear buds with plastic sticks, plastic sticks for balloons, plastic flags, candy sticks, ice-cream sticks, polystyrene [Thermocol] for decoration;
 - (b) plates, cups, glasses, cutlery such as forks, spoons, knives, straw, trays, wrapping or packing films around sweet boxes, invitation cards, and cigarette packets, plastic or PVC banners less than 100 micron, stirrers.
- (3) The provisions of sub-rule (2) (b) shall not apply to commodities made of compostable plastic.
- (4) Any notification prohibiting the manufacture, import, stocking, distribution, sale and use of carry bags, plastic sheets or like, or cover made of plastic sheets and multilayered packaging and single-use plastic, including polystyrene and expanded polystyrene, commodities, issued after this notification, shall come into force after the expiry of ten years, from the date of its publication.
- **5. Plastic waste management.-** (1) The plastic waste management by the urban local bodies in their respective jurisdiction shall be as under:-
- (a) plastic waste, which can be recycled, shall be channelized to registered plastic waste recycler and recycling of plastic shall conform to the Indian Standard: IS 14534:1998 titled as Guidelines for Recycling of Plastics, as amended from time to time.

- (b) local bodies shall encourage the use of plastic waste (preferably the plastic waste which cannot be further recycled) for road construction as per Indian Road Congress guidelines or energy recovery or waste to oil etc. The standards and pollution control norms specified by the prescribed authority for these technologies shall be complied with.
- (c) Thermoset plastic waste shall be processed and disposed off as per the guidelines issued from time to time by the Central Pollution Control Board.
- (d) The inert from recycling or processing facilities of plastic waste shall be disposed of in compliance with the Solid Waste Management Rules, 2000 2016 or as amended from time to time.
- **6. Responsibility of local body.-** (1) Every local body shall be responsible for development and setting up of infrastructure for segregation, collection, storage, transportation, processing and disposal of the plastic waste either on its own or by engaging agencies or producers.
- (2) The local body shall be responsible for setting up, operationalisation and co-ordination of the waste management system and for performing the associated functions, namely:-
- (a) Ensuring segregation, collection, storage, transportation, processing and disposal of plastic waste;
- (aa) ensuring that the provisions of these rules, as amended, are adhered to;
- (b) ensuring that no damage is caused to the environment during this process;
- (c) ensuring channelization of recyclable plastic waste fraction to recyclers;
- (d) ensuring processing and disposal on non-recyclable fraction of plastic waste in accordance with the guidelines issued by the Central Pollution Control Board;
- (e) creating awareness among all stakeholders about their responsibilities;
- (f) engaging civil societies or groups working with waste pickers; and
- (g) ensuring that open burning of plastic waste does not take place.
- (3) The local body for setting up of system for plastic waste management shall seek assistance of producers and such system shall be set up within one year from the date of final publication of these rules in the Official Gazaette of India.
- (4) The local body to frame bye-laws incorporating the provisions of these rules.
- 7. Responsibility of Gram Panchayat.-

- (1) Every gram panchayat either on its own or by engaging an agency shall set up, operationalise and co-ordinate for waste management in the rural area under their control and for performing the associated functions, namely,-
 - (a) ensuring segregation, collection, storage, transportation, plastic waste and channelization of recyclable plastic waste fraction to recyclers having valid registration; ensuring that no damage is caused to the environment during this process;
 - (aa) ensuring that the provisions of these rules, as amended,
 - (b) creating awareness among all stakeholders about their responsibilities; and
 - (c) ensuring that open burning of plastic waste does not take place

8. Responsibility of waste generator.- (1) The waste generator shall.-

- (a) take steps to minimize generation of plastic waste and segregate plastic waste at source in accordance with the Solid Waste Management Rules, 2000 or as amended from time to time.
- (b) not litter the plastic waste and ensure segregated storage of waste at source and handover segregated waste to urban local body or gram panchayat or agencies appointed by them or registered waste pickers', registered recyclers or waste collection agencies;
- (2) All institutional generators of plastic waste, shall segregate and store the waste generated by them in accordance with the Municipal Solid Waste (Management and Handling) Rules, 2000 notified vide S.O 908(E) dated the 25th September, 2000 under the Act or amendment from time to time and handover segregated wastes to authorized waste processing or disposal facilities or deposition centers either on its own or through the authorized waste collection agency.
- (3) All waste generators shall pay such user fee or charge as may be specified in the byelaws of the local bodies for plastic waste management such as waste collection or operation of the facility thereof, etc.;
- (4) Every person responsible for organising an event in open space, which involves service of food stuff in plastic or multilayered packaging shall segregate and manage the waste generated during such events in accordance with the Municipal Solid Waste (Management and Handling) Rules, 2000 notified vide S.O 908(E) dated the 25th September, 2000 under the Act or amendment from time to time.
- 9. Responsibility of producers, Importers and Brand Owners.- (1) The producers, within a period of six months from the date of publication of these rules, shall work out



modalities for waste collection system based on Extended Producers Responsibility and involving State Urban Development Departments, either individually or collectively, through their own distribution channel or through the local body concerned as per guidelines issued under these rules from time to time;

- (2) Primary responsibility for collection of used multi-layered plastic sachet or pouches or packaging is of Producers, Importers and Brand Owners who introduce the products in the market. They need to establish a system for collecting back the plastic waste generated due to their products. This plan of collection to be submitted to the State Pollution Control Boards while applying for Consent to Establish or Operate or Renewal. The Brand Owners whose consent has been renewed before the notification of these rules shall submit such plan within one year from the date of notification of these rules and implement with two years thereafter.
- (3) manufacture and use of non-recyclable multilayered plastic if any "multi-layered plastic which is non-recyclable or non-energy recoverable or with no alternate use" should be phased out in Two years time.
- (4) The producer, within a period of three months from the date of final publication of these rules in the Official Gazette shall apply to the Pollution Control Board or the Pollution Control Committee, as the case may be, of the States or the Union Territories administration concerned, for grant of registration.
- (5) No producer shall on and after the expiry of a period of Six Months from the date of final publication of these rules in the Official Gazette manufacture or use any plastic or multilayered packaging for packaging of commodities without registration from the concerned State Pollution Control Board or the Pollution Control Committees.
- (6) 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 multilayered packaging.
- 10. Protocols for compostable plastic materials.-Determination of the degree of degradability and degree of disintegration of plastic material shall be as per the protocols of the Indian Standards listed in Schedule-I to these rules.
- **11. Marking or labelling**.-(1) Each plastic carry bag plastic packaging and multilayered packaging shall have the following information printed in English namely,-
- (a) name, registration number of the manufacturer, producer or brand owner and thickness in case of carry bag and plastic packaging used by the brand owner";

- (b) name and registration number of the manufacturer in case of multilayered packaging excluding multi-layered packaging used for imported goods; and
- (c) name and certificate number of producer[Rule 4(h)] in case of carry bags made from compostable plastic
- (2) Each recycled carry bag shall bear a label or a mark "recycled" as shown below and shall conform to the Indian Standard: IS 14534: 1998 titled as "Guidelines for Recycling of Plastics", as amended from time to time;
- NOTE: PET-Polyethylene terephthalate, HDPE-High density polyethylene, V-Vinyl (PVC), LDPE- Low density polyethylene, PP-Polypropylene, PS-Polystyrene and Other means all other resins and multi-materials like ABS (Acrylonitrile butadiene styrene), PPO (Polyphenylene oxide), PC (Polycarbonate), PBT (Polybutylene terephalate) etc.
- Each carry bag made from compostable plastics shall bear a label "compostable" and shall conform to the Indian Standard: IS or ISO 17088:2008 titled as Specifications for "Compostable Plastics".
- **12. Prescribed authority.-** (1) The State Pollution Control Board and Pollution Control Committee in respect of a Union territory shall be the authority for enforcement of the provisions of these rules relating to registration, manufacture of plastic products and multilayered packaging, processing and disposal of plastic wastes.
- (2) The concerned Secretary-in-charge of Urban Development of the State or a Union Territory shall be the authority for enforcement of the provisions of these rules relating to waste management by waste generator restriction or prohibition on use of plastic carry bags, plastic sheets or like, covers made of plastic sheets and multilayered packaging.
- (3) The concerned Gram Panchayat shall be the authority for enforcement of the provisions of these rules relating to waste management by the waste generator restriction or prohibition on use of plastic carry bags, plastic sheets or like, covers made of plastic sheets and multilayered packaging in the rural area of the State or a Union Territory.
- (4) The authorities referred to in sub-rules (1) to (3) shall take the assistance of the District Magistrate or the Deputy Commissioner within the territorial limits of the jurisdiction of the concerned district in the enforcement of the provisions of these rules.
- **13. Registration of producer, recyclers and manufacturer,-** (1) No person shall manufacture carry bags or recycle plastic bags or multilayered packaging unless the

- person has obtained a registration from the State Pollution Control Board or the Pollution Control Committee of the Union Territory concerned or the Central Pollution Control Board, as the case may be, prior to the commencement of production;
- (2) Every producer shall, for the purpose of registration or for renewal of registration, make an application to the State Pollution Control Board or the Pollution Control Committee of the Union territory concerned, in Form I
- "Every producer or brand-owner shall for the purpose of registration or renewal of registration, make an application, in Form I to, -
 - (i) the concerned State Pollution Control Board or Pollution Control Committee of the Union territory,
 - (ii) the Central Pollution Control Board, if operating in more than two States or Union Territories";
- (3) Every person recycling or processing waste or proposing to recycle or process plastic waste shall make an application to the State Pollution Control Board or the Pollution Control Committee, for grant of registration or renewal of registration for the recycling unit, in Form II.
- (4) Every manufacturer engaged in manufacturer of plastic to be used as raw material by the producer shall make an application to the State Pollution Control Board or the Pollution Control Committee of the Union territory concerned, for the grant of registration or for the renewal of registration, in Form III.
- (5) The State Pollution Control Board or the Pollution Control Committee shall not issue or renew registration to plastic waste recycling or processing units unless the unit possesses a valid consent under the Water (Prevention and Control of Pollution) Act, 1974 (6 of 1974) and the Air (Prevention and Control of Pollution) Act, 1981 (14 of 1981) along with a certificate of registration issued by the District Industries Centre or any other Government agency authorised in this regard.
- (6) The State Pollution Control Board or the Pollution Control Committee shall not renew registration of producer unless the producer possesses and action plan endorsed by the Secretary in charge of Urban Development of the concerned State or Union Territory for setting of plastic waste management system.
- (7) On receipt of the application complete in all respects for the registration for recycling or processing of plastic waste under sub-rule (3), the State Pollution Control Board may, after such inquiry as it considers necessary and on being satisfied that the applicant possesses appropriate facilities, technical capabilities and equipment to

- handle plastic waste safely, may grant registration to the applicant on fulfilment of the conditions as may be laid down in terms of registration.
- (8) Every State Pollution Control Board or Pollution Control Committee shall take a decision on the grant of registration within ninety days of receipt of an application which is complete in all respects.
- (9) The registration granted under this rule shall initially be valid for a period of one year, unless revoked, suspended or cancelled and shall subsequently be granted for three years.
- (10) State Pollution Control Board or the Pollution Control Committees shall not revoke, suspend or cancel registration without providing the opportunity of a hearing to the producer or person engaged in recycling or processing of plastic wastes.
- (11) Every application for renewal of registration shall be made at least one hundred twenty days before the expiry of the validity of the registration certificate.
- 14. Responsibility of retailers and street vendors- (1) Retailers or street vendors shall not sell or provide commodities to consumer in carry bags or plastic sheet or multilayered packaging, which are not manufactured and labelled or marked, as per prescribed under these rules.
- (2) Every retailers or street vendors selling or providing commodities in, plastic carry bags or multilayered packaging or plastic sheets or like or covers made of plastic sheets which are not manufactured or labelled or marked in accordance with these rules shall be liable to pay such fines as specified under the bye-laws of the local bodies.
- 15. Explicit pricing of carry bags.- (1) The shopkeepers and street vendors willing to provide plastic carry bags for dispensing any commodity shall register with local body. The local body shall, within a period of six months from the date of final publication of these rules ion the Official Gazette of India notification of these rules, by notification or an order under their appropriate state statute or byelaws shall make provisions for such registration on payment of plastic waste management fee of minimum rupees forty eight thousand @ rupees four thousand per month. The concerned local body may prescribe higher plastic waste management fee, depending upon the sale capacity. The registered shop keepers shall display at prominent place that plastic carry bags are given on payment.
- (2) Only the registered shopkeepers or street vendors shall be eligible to provide plastic carry bags for dispensing the commodities.



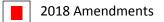
- (3) The local body shall utilize the amount paid by the customers for the carry bags exclusively for the sustainability of the waste management system within their jurisdictions.
- **16. State Level Monitoring Committee.-** (1) The State government or the union Territory shall, for the purpose of effective monitoring of implementation of these rules, constitute a State Level Advisory Committee consisting of the following persons, namely;-
 - (a) the Secretary, Department of Urban Development Chairman
 - (b) Director from State Department of Environment Member
 - (c) Member Secretary from State Pollution Control Board or Pollution Control Committee - Member
 - (d) Municipal Commissioner Member
 - (e) one expert from Local Body Member
 - (f) one expert from Non-Governmental involved in Waste Management Member
 - (g) Commissioner, Value Added Tax or his nominee, Member
 - (h) Sales Tax Commissioner or Officer Member
 - (i) representative of Plastic Association, Drug Manufacturers Association, Chemical Manufacturers Association - Member
 - (j) one expert from the field of Industry Member and
 - (k) one expert from the field of academic institution Member
 - (1) Director, Municipal Administration-Convener
- The State Level Advisory Body shall meet at least once in Six Month and may invite experts, if it considers necessary.
- **17. Annual reports.-** (1) Every person engaged in recycling or processing of plastic waste shall prepare and submit an annual report in Form-IV to the local body concerned under intimation to the concerned State Pollution Control Board or Pollution Control Committee by the 30th April, of every year.
- (2) Every local body shall prepare and submit an annual report in Form –V to the concerned Secretary-in-charge of the Urban Development Department under intimation to the concerned State Pollution Control Board or Pollution Control Committee by the 30th June, every year.

- (3) Each State Pollution Control Board or Pollution Control Committee shall prepare and submit an annual report in Form VI to the CPCB on the implementation of these rules by the 31st July, of every year.
- (4) The CPCB shall prepare a consolidated annual report on the use and management of plastic waste and forward it to the Central Government along with its recommendations before the 31st August of every year.

Schedule-I

[See rule 10]

1.	IS / ISO 14851: 1999 Determination of the ultimate aerobic biodegradability of
	plastic materials in an aqueous medium-Method by measuring the oxygen demand
	in a closed Respirometer
	IS / ISO 14852: 1999 Determination of the ultimate aerobic biodegradability of
2.	plastic materials in an aqueous medium-Method by analysis of evolved carbon
	dioxide
	IS / ISO 14853: 2005 Plastics- Determination of the ultimate anaerobic
3.	biodegradation of plastic materials in an aqueous system-Method by measurement
	of biogas production
	IS /ISO 14855-1: 2005 Determination of the ultimate aerobic biodegradability of
4.	plastic materials under controlled composting conditions-Method by analysis of
	evolved carbon dioxide (Part-1 General method)
	IS / ISO 14855-2: 2007 Determination of the ultimate aerobic biodegradability of
5.	plastic materials under controlled composting conditions-Method by analysis of
	evolved carbon dioxide (Part-2: Gravimetric measurement of carbon dioxide
	evolved in a laboratory- scale test)
	IS / ISO 15985: 2004 Plastics- Determination of the ultimate anaerobic
6.	biodegradation and disintegration under high-solids anaerobic digestion
	conditions- Methods by analysis of released biogas



	IS /ISO 16929: 2002 Plastics- Determination of degree of disintegration of plastic
7.	materials under defined composting conditions in a pilot - scale test
	IS / ISO 17556: 2003 Plastics- Determination of ultimate aerobic biodegradability
8.	in soil by measuring the oxygen demand in a Respirometer or the amount of
	carbon dioxide evolved
	IS / ISO 20200:2004 Plastics- Determination of degree of disintegration of plastic
9.	materials under simulated composting conditions in a laboratory - scale test