

**Report of the Expert Committee  
to examine the comments and suggestions  
including economic instruments in the draft  
Plastics (Manufacture, Usage and Waste  
Management) Rules, 2009**

**New Delhi  
October, 2010**

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## Executive Summary

The Ministry of Environment and Forests (MoEF) notified the draft "Plastics (Manufacture, Usage and Waste Management) Rules, 2009" to replace the Recycled Plastics Manufacture and Usage Rules, 1999 (amended in 2003) to regulate the manufacture and usage of plastic carry bags. The draft rules were widely published for public comments. An expert committee was constituted by the (MoEF) to examine these comments and to suggest economic instruments.

The Committee recognized that lack of organized system for segregation, collection of plastic waste is a matter of concern and that without proper waste management, the objectives of the Rules would not be achieved. Such a system has to take into account the entire lifecycle of plastic and requires cooperation of municipalities, manufacturers, retailers and consumers of plastic products. The Committee suggested that the title of the new rules be changed to the *Plastic Waste (Management and Handling) Rules, 2010* to reflect its focus. It agreed to preserve the size and thickness provisions as in the 2009 draft rules and suggested that the terminology "compostable" may be used in place of "biodegradable. The Committee further, inter alia, recommended for a system of Extended Producer Responsibility (EPR) for recycling plastic waste, requiring state and central fiscal policies to explicitly account for the plastic waste, introducing "explicit pricing" for all plastic carry bags sold and creation of a system such as a state level advisory body that would monitor and evaluate the performance of different regions with regard to implementing the rules.

## **I. Introduction:**

1. Ministry of Environment and Forests (MoEF) notified the Recycled Plastics Manufacture and Usage Rules, 1999 (amended in 2003) to regulate the manufacture and usage of plastic carry bags and recycled plastic products. In 2009, the ministry notified the draft "Plastics (Manufacture, Usage and Waste Management) Rules, 2009" to replace these rules. The new draft rules were Published in the Gazette of India on 18<sup>th</sup> September, 2009 for wide circulation and comments were invited from public likely to be affected thereby. Over 500 comments were received in response to the draft notification.

## **II. Expert Committee to examine the comments and suggest economic instruments:**

2. Ministry of Environment and Forests constituted an expert committee in April, 2010 to examine the feasibility of economic instrument including fiscal measures to improve plastic waste management. The composition of the Committee is at annexure-I. The committee was provided with the following *Terms of Reference*:
  - (i) To examine the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009 with reference to various suggestions/ comments received.
  - (ii) To review the cross-national experience with recent policies to deal with plastic carry bags and recycling.
  - (iii) To suggest economic instruments, including fiscal measures, to promote environment friendly alternatives to plastic carry bags.
3. The initial tenure of the committee was for two months and this was later extended by one more month until July 31, 2010. The Committee held seven meetings over these three months (May 06, May 21, June 25, July 02, July 14 and July 28). Two additional drafting meetings were held on 5<sup>th</sup> and 23<sup>rd</sup> August, 2010. The minutes of the meetings are in annexure-II to this report.

4. During its first meeting the committee deliberated on the ambit of the rules and on whether they should include consideration of a wider set of packaging and waste management policies or be restricted to plastic carry bags. It was decided over the course of several meetings that given the time available to the committee and the technical expertise required to institute comprehensive packaging rules, the committee would restrict itself to the use and waste management of plastic carry bags and multilayered plastics. It was hoped that many of the principles discussed in this report and consequent changes incorporated in the draft rules could serve as a basis for regulating other types of plastic packaging in the near future.
5. The meetings of the committee included several presentations by technical experts and industry representatives. Based on comments from the Indian Institute of Packaging, the committee recognized that while introducing size and thickness specifications for plastic carry bags was a relatively straightforward matter, size and volume specifications for various types of multilayered plastics was much more complicated because of the many uses to which these plastics were put. As a result, regulations for multilayered plastics focused on labeling, recycling and the waste management.
6. The major changes suggested by the Committee involved (i) introducing a system of Extended Producer Responsibility (EPR) for recycling plastic waste, (ii) requiring state and central fiscal policies to explicitly account for the plastic waste, (iii) introducing “explicit pricing” for all plastic carry bags sold, (iv) setting up a state level advisory body to advise and assist in monitoring the impact of these rules and the degree to which they are complied with by different sections of society, and (v) including informal sector actors such as waste pickers, in plastic waste management.

### **III. International practices:**

7. Different countries are taking different approaches on the issue of plastic carry bags. Some countries have stipulated minimum thickness for plastic carry bags

viz. China (25 microns), South Africa (24 microns), Taiwan (60 microns), Kenya (30 microns). Bangladesh has banned the use of plastic carry bags altogether. The super markets/ retail stores in some country charge a price, instead of giving away plastic carry bags for free, such as in Finland (Euro 0.15-0.50), Germany (Euro 0.2 – 0.5), Iceland (Euro 0.2), Ireland (Euro 0.15), Italy (Euro 0.15-0.5) etc.

#### **IV. Present regulatory system in India:**

8. Ministry of Environment and Forests notified the Recycled Plastics Manufacture and Usage Rules, 1999 (amended in 2003) to regulate the manufacture and usage of plastic carry bags. These rules prohibit the manufacture, stocking, distribution, or selling of carry bags made of virgin or recycled plastic less than 8x12” (20 x 30 cm) in size and 20 microns in thickness. These rules also disallow the use of recycled plastic bags and containers for storing, carrying, dispensing or packaging of foodstuffs. Further, the units manufacturing carry bags or containers of virgin plastic or recycled plastic or both are required to register with the concerned State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) prior to the commencement of production. The colourants and pigments prescribed by Bureau of Indian Standards (BIS) alone can be used in manufacturing of recycled coloured plastic bags and the recycling of plastics must be in accordance with the BIS standard procedure.
9. Some states have enacted stringent laws that further limit the use of plastic bags. The states of Goa, Punjab, Kerala, Maharashtra, Meghalaya and West Bengal have also prescribed norms for the permissible thickness of plastic bags varying between 30 and 50 microns. Further, the states of Gujarat, Orissa and Goa have banned the use of plastic bags in certain religious and tourist places like Ambaji, Dakor, Somnath in Gujarat and municipal area of Puri and Konark in Orissa Victoria memorial in Kolkata etc. Over the last couple of years, Chandigarh, Delhi, Himachal Pradesh and Rajasthan have instituted bans on plastic bags in market areas.

## **V. Previous Committees on Plastic Waste Management**

10. Several committees and expert groups have been formed in the past to assess the environmental effects of plastic waste. In 1997, a Task Force was constituted under the chairmanship of Shri Dilip Biswas, Former Chairman, Central Pollution Control Board (CPCB) to formulate a strategy and action program for management of plastic waste.
11. In 2002, the Justice Ranganath Mishra Committee examined the environmental hazards posed by the indiscriminate littering and disposal of plastic wastes and made recommendations on methods of collection segregation, treatment and disposal of plastic waste.
12. A Committee under the chairmanship of Justice (Retd.) Shri R.C. Chopra was constituted by the High Court of Delhi to study the environmental hazards related to the use of plastic bags in the city of Delhi. The Chopra Committee recommended against a blanket ban on use of plastic bags since there was no evidence that virgin plastic bags posed any health hazard. It did recommend an increase in the minimum thickness of plastic carry bags to 40 microns, the banning of non-recyclable multilayered and metalized pouches and support for the manufacture of degradable bags and agencies that remove and recycle plastic waste.

## **VI. Evolution of central government rules on the manufacture, use and management of plastic products.**

13. The Ministry of Environment and Forests notified the draft "Plastics (Manufacture, Usage and Waste Management) Rules, 2009" to replace the Recycled Plastic Manufacture and Usage Rules, 1999 (as amended in 2003). The 1999 rules stipulated both size and thickness restrictions on plastic bags, requiring them to be at least 8 X 12 inches in size and 20 microns in thickness.

14. The 2009 draft rules also required manufacturers to print their name and address on each carry bag and container and to mark it in a manner that would make it possible to ascertain whether it was “virgin plastic”, “recycled plastic” or “bio-degradable plastic” as per BIS specification.
15. The Committee made in-depth deliberations on each clause of the draft notification. It took into account the various comments that were received by the ministry on the draft rules and invited technical experts and representatives of firms and industry associations. In comments that were received, industry associations made the case that stringent restrictions would divert the users to shift to alternative types of bags, which could pose environmental issues. It would also hurt profitability and employment and the use of alternatives to plastics were often more expensive. Pollution Control Boards and representations from NGOs and academics on the other hand pushed for more stringent regulations.
16. Presentations were made by Mr. Perses Bilimoria ( CEO, M/s Earthsoul India Pvt. Ltd.) on biodegradable plastic bags, Mr. T.K. Bandopadhyay (Indian Centre for Plastics in the Environment) on plastic recycling and recovery options developed and available in India and in other countries , Dr. N. C. Saha (Director, Indian Institute of Packaging) on the composition of multilayered plastic packaging, Mr. P. Das Gupta (representing FICCI) on the role of industry in plastic recycling and Mr. Ravi Kumar Aggarwal ( President, All India Plastic Industries Association) on the technical aspects of plastic bag production and the cost implications of changes in size and thickness. A summary of these presentations is in the next section.
17. The new draft put together by the committee preserves many of the use restrictions on plastic bags that were in the 2009 draft rules. In addition, it specifically articulates the responsibilities of municipalities, manufacturers and retailers in helping enforce the rules through proper labeling of products and the creation of effective recycling systems. To limit the creation of plastic waste the new rules mandate the explicit pricing of plastic bags and



recommend the use of fiscal incentives to limit the use of plastic carry bags by industry. The recommended changes in the rules along with a summary of deliberations within the committee are presented in Section 6.

18. The draft rules recommended by the present committee have incorporated elements of successful policies observed both within and outside India. The use restrictions on the size and thickness of plastic bags will raise their cost and thereby encourage its re-use. While this will discourage its use, the littering and waste management issues caused by ultra thin bags due to its disposal after single use could be avoided. A new section on economic incentives is based on the success of the explicit pricing of bags observed in many parts of the world. These incentives could also provide substantial revenue that can be channelized into an environmental fund and used to promote environmental quality. The clauses related to the responsibilities of municipalities and manufactures for the safe recycling of plastic bags and multilayered plastics are put in place to increase the use of recycled bags and reduce the litter that they generate. It is hoped that these rules will encourage municipalities to put in place new policies such as unit pricing and effective segregation systems that reduce litter, encourage recycling and improve environmental health.

## **VII. Summary of presentations made to the Expert Committee.**

19. Mr. Perses Bilimoria, CEO, M/s Earthsoul India Pvt. Ltd. gave a presentation on use of bio plastics. In his presentation, he gave an overview of the use of bio-based plastics, substitute for plastics produced from non-renewable resources etc. global standards for biodegradability, life cycle assessment of Poly Ethylene (PE) and biodegradable plastics as well as the availability of testing facility for biodegradable plastics. He clarified that compostable plastics would get mixed with soil even without any added manual or mechanical intervention. He also urged to develop a mechanism of disposal of biodegradable and non-biodegradable plastic wastes at landfill site.

20. Mr. T.K. Bandopadhyay, Member of the Committee from the Indian Center for Plastics in the Environment (ICPE), apprised the Committee on various technologies for recovery and recycling of plastic waste vis-à-vis various uses of plastic waste such as co-incineration in cement kiln, asphalt road construction, precursor for fuel, mechanical recycling and molding into compressed board/lumber, substitute to wood, household products, furnitures etc. He emphasized that viable and adoptable technologies have been developed in India to recycle all plastic waste or recover energy for useful applications.
  
21. Mr. P. Das Gupta, on behalf of FICCI and the Packaging Industries Association, made a presentation on multilayered packaging, its recycling and waste management. He argued that while industries, individually and collectively, can initiate awareness campaigns on best practices on the collection, segregation and disposal of plastic waste it would be difficult for them, on their initiatives alone, to segregate plastic waste from municipal waste. Industry could also contribute to the plastic waste problem by using plastic waste in their production processes and by investing in R& D efforts that promote recycling.
  
22. Mr. Ravi Kumar Aggarwal President, All India Plastic Industries Association, Delhi described the way in which plastic bags are produced and described where units are located. He mentioned that machines used to produce thin bags could be used for thicker ones as well. He further mentioned that emphasis need to be given on promoting 3R principle (Reduce, Reuse and Recycle). He agreed that thicker bags would improve incentives for collecting the waste and recycling them. He however encouraged the committee to reconsider the size restrictions on plastic bags since, based on current levels of consumption, this would increase the total consumption of plastic material. Increase in the size of the carry bag, would increase the resource consumption by 5 times and is in contravention of the 3R principle. An alternative would be to increase levies on the firms producing raw materials and channelize this

into a fund that can be used for collection, segregation and disposal of plastic wastes.

23. Dr. N. C. Saha, Director, Indian Institute of Packaging was invited to give a presentation to the committee and was also consulted subsequently on the feasibility of size and volume restrictions on multilayered plastics. During his presentation he gave an overview of the composition of multilayered packaging and its recyclability. He explained how the thickness of the laminated structure plays a vital role in determining the shelf life of products. Thicker laminates prevent the permeation of moisture into a package and thereby prolong shelf life. As a result, the appropriate thicknesses for a laminate depends on the product under consideration and marketing strategies of firms will influence the desired shelf-life of the product. This makes it difficult to stipulate uniform norms for products packaged in multilayered plastics. Similarly, the sizes of pouches vary by both the density of the product and its fragility. Certain products like potato chips are packed in a pouch in which vacuumization, followed by the filling of inert gases like nitrogen that restrict the fat oxidation. Therefore, the size of the pouches is influenced by the product's bulk density, consumer preferences and various economic considerations. He mentioned that consumer goods are packed in accordance with the Weights and Measures Act, 1977. In view of these considerations, Dr. Saha concluded that, unlike carry bags, the size of the single layer or multilayered pouches or packaging materials cannot be subjected to uniform size and thickness stipulations.
24. The Committee considered the comments of Indian Institute of Packaging (Annexure- III) and agreed that the multilayered, laminated and metalized pouches cannot have similar specification like carry bags since the end use for both the categories are completely different.
25. The provisions relating to non-applicability of the rules to the manufacture of carry bags exclusively for export purposes, against an order for export received by the owner or occupier of the concerned manufacturing unit was

discussed. While some members of the Committee were of the view that this provision may be deleted, other members were of the view that this provision should be retained so as to encourage exporting industries. The Committee was informed that the Ministry of Commerce had suggested, in their comments to the draft notification, to introduce this provision so as to encourage the exporting industries. Some members of the Committee expressed concern about leakage of the export designated carry bags into the domestic markets, difficulty in checking their misuse etc and that it will be unethical to export such products to other countries. The Committee therefore, (with the exception of one member) recommended that this clause be deleted, and only in case it is to be included, owing to other requirements the clause should be modified to:

“The provisions of rule 5 and 8 shall not apply to the manufacture of carry bags exclusively for export purposes, by export oriented manufacturing units, against an order for export received by the owner or occupier of the concerned manufacturing unit. This exemption does not apply to any surplus or rejects, left over etc.”

### **VIII. Details of deliberations by and recommendations of the Expert Committee.**

This section describes some of the discussions that took place within the committee together with the recommendations for changes in the draft rules that came out of these discussions. The Committee has recommended the revised rules (Annexure-IV). Salient features of the recommendations are as follows:

(a) *Title and scope of the rules:*

26. At the first meeting on May 6, 2010, the title and the ambit of the rules were discussed. There was general agreement that although the draft rules were called the *Plastics (Manufacture, Usage and Waste Management) Rules, 2009*, the emphasis in the rules was on plastic carry bags and

multilayerd packaging. The rules mentioned containers etc and it was decided not to include all these for deliberation in the given time period. The members discussed whether or not the scope of the rules should be expanded to include all types of plastics or alternatively, the title changed to reflect the content of the rules more accurately. After detailed deliberations over several meetings, it was agreed that the rules should, for the most part, be restricted to the use and disposal of carry bags and multilayered plastics.

27. This restriction in the ambit of the rules was for two principal reasons. First, it was recognized that plastics are used in many different processes of production and in various types of consumer goods. This makes the process of arriving at appropriate rules for all types of plastics are technically demanding and difficult to accomplish during the relatively short tenure of the committee. Second, plastic bags and multilayered plastics pose serious problems of littering in both urban and rural areas and were the primary concern of the 1999, 2003 and the 2009 draft rules. It was thought prudent to maintain the same domain of coverage because comments had been invited and received on the 2009 draft rules. Moreover, these are also the biggest problem because they are neither adequately collected nor recycled. However, the committee agreed that there is a need to address plastic waste in the long run, and the rules were therefore made in a template form that could subsequently include other kinds of plastic wastes. The committee further agreed that it would not explicitly include size and thickness restrictions on plastic containers or multilayered plastics because of the enormous range of products that fall into these categories. It was decided that the title of the new rules be changed to the *Plastic Waste (Management and Handling) Rules, 2010* to reflect this focus. It was agreed that the principles on which the new rules are based should also guide the formation of rules for other types of plastics and that the Ministry may start the process of formulating these rules in the future.

(b) *Restrictions on plastic bags and their applicability.*

28. The committee decided to preserve the size and thickness provisions in the 2009 draft rules with exception of one member who suggested for

retaining the thickness at 40 microns but reducing the size to a lower level. Although it was generally agreed that if the demand for plastic bags remained at the present level, the increased size and thickness provisions would imply a greater use of plastic (as argued by the plastics associations), it was also felt, based on the international and sub-national experience, that the higher cost of plastic bags implied by these restrictions would lead to a sharp fall in demand. Retailers would be much less willing to provide free bags for small and low-value purchases. In addition, if the “explicit pricing” clause in proposed in the rules is effectively implemented, consumers in India, as elsewhere, are likely to find alternatives for those products for which plastic carry bags are least useful or would tend to re-use the thicker and larger sized bags instead of disposing them after single use.

29. Plastic bags made of virgin plastic were restricted to be of *natural shade* in the draft rules. The members agreed that this terminology was vague and instead stipulated that they be white, or without any added pigments. It was also felt that since BIS has developed protocols for “compostable plastics”, the terminology “compostable” may be used in place of “biodegradable”. The Committee agreed to the suggestions and incorporated the term “compostable” in the new version of the draft rules accordingly.

30. The 2009 draft rules and previous rules had provided an exemption for exporters of plastic bags. There was considerable disagreement within the committee on whether or not this exemption should be maintained for carry bags produced exclusively for export purposes. The committee was informed that the Ministry of Commerce had suggested, in their comments to the draft notification, to introduce this provision so as to encourage the exporting industries. While some members were of the view that this exemption should be retained to encourage exporting industries, others believed this policy could lead to leakages of such bags into the domestic market. Some members also felt it was ethically objectionable to encourage the export of products that were thought to be domestically harmful particularly as some of these exports are likely to be to other countries with similar waste management problems.

31. The committee decided to adopt the majority view of deleting the export exemption and, should this recommendation not be accepted and the clause be maintained, it suggested that it be modified to:

“The provisions of rule 5 and 8 shall not apply to the manufacture of carry bags exclusively for export purposes, by export oriented manufacturing units, against an order for export received by the owner or occupier of the concerned manufacturing unit. This exemption does not apply to any surplus or rejected items.”

(c) *The responsibilities of different stakeholders in plastic waste management:*

32. The committee was unanimous in its view that littering of plastic waste and lack of organized system for segregation, collection of plastic waste is a matter of concern and that without proper waste management, the objectives of the Rules would not be achieved. Such a system has to take into account the entire lifecycle of plastic products and requires the cooperation of municipalities, manufacturers of plastics, retailers and consumers of plastic products.

33. As per the Municipal Solid Wastes (Management and Handling) Rules, 2000, every municipal authority (or appropriate civic body outside municipal boundaries) is responsible for the collection, storage, segregation, transportation and disposal of municipal solid waste. The Committee also recommended the similar approach incorporating a combination of minimum thickness and size, pricing of plastic carry bags and plastic waste management can be a pragmatic approach for plastic waste management. Keeping these discussions in view, a clause on “Plastic Waste Management” was suggested to be incorporated in the rules, emphasizing the responsibilities of the Municipalities/civic agencies and the role of other stakeholders such as Waste Pickers/ Recycling agencies, etc. along with their responsibilities. It was also decided that, in line with the polluter-pays principle, *Extended Producer Responsibility* (EPR) should be introduced into the waste management system.

The role of industries would be critical in financing the cost of these activities. To ensure effective recycling, collection centers would have to pay prices that would make it attractive to collect plastic waste. Also, all recycling units should be registered with State Pollution Control Boards and Pollution Control Committees to ensure appropriate recycling process are followed.

34. During the deliberation on the roles and the responsibilities of municipalities or civic agencies, industries, recyclers, waste pickers etc. for collection, segregation and disposal of plastic wastes, majority of the members were of the view that the manufactures and municipalities will have joint responsibilities. However, one member was of the view that responsibilities for collection of waste should be vested with the municipalities and not jointly with the manufactures. Manufacturers should take part in the activities such as setting up of collection centers, recycling units etc.

35. It was recognized that the open burning of municipal waste continued to be a problem in spite of regulations against such burning, and a special provision against this practice was introduced into the waste management section of these rules.

(d) Restrictions on multilayered plastics:

36. Some members of the committee were of the view that the rules could include specifications for multilayered, laminated and metalized pouches, as they do for carry bags. Small pouches with single use servings that are currently popular for tobacco products, shampoo and other goods create enormous litter problems and are often burned illegally by municipal workers. There were dissenting notes within the committee as some members felt that it was not practical to arrive at uniform packaging standards given the large number of disparate items that were packaged in this manner.

37. Keeping these conflicting opinions in view, the committee requested the expert opinion of Indian Institute of Packaging on this subject. Based on



this opinion, single layer or multilayered pouches or packaging materials cannot have uniform size and thickness like carry bags since the end use for both the categories are completely different. It seems that packaging restrictions, if put in place, would require considerable careful deliberation and would have to be along the lines of the *Weights and Measures Rules*. In view of these considerations, it was therefore decided to not include any such standards in the present rules.

## **IX. Conclusions:**

38. The mandate of the committee was to deliberate on the draft rules, incorporate public comments and bring in a set of instruments and policies that would help control the plastic waste problem in India. While wide-ranging ideas were shared during these meetings, some of them quite radical, the committee decided to stay fairly close to the spirit of the 2009 draft rules. The major changes introduced were with respect to waste management, the introduction of fiscal incentives to reduce plastic waste, and the creation of a system that would monitor and evaluate the performance of different regions with regard to implementing the rules. Committee members saw these rules as *waste management* rules rather than more broad based packaging waste rules and appropriately re-titled the draft rules. It was hoped that more types of plastic waste would be addressed and similar comprehensive rules would be brought out in the near future.

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## Annexure-I

F. No. 17-2/2001- HSMD  
Government of India  
Ministry of Environment & Forests  
HSM Division

Paryavaran Bhavan  
CGO Complex, Lodi Road  
New Delhi-110003  
Date: 30<sup>th</sup> April, 2010

## OFFICE ORDER

**Subject: Constitution of an Expert Committee to examine the comments and suggestions including economic instruments in the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009.**

The Ministry of Environment & Forests have published the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009. Comments and suggestions have been received on the draft notification which are currently being examined. An Expert Committee is hereby constituted to examine the feasibility of economic instruments, including fiscal measures to improve plastic waste management. The composition of the Expert Committee will be as follows:

- (i) Dr. Rohini Somanathan,  
Professor, Delhi School of Economics  
Delhi.
- (ii) Shri Ritwick Dutta,  
Lawyer, New Delhi.
- (iii) Shri Ravi Aggarwal,  
Toxics Link, New Delhi.
- (iv) Shri Kushal Yadav  
Centre for Science & Environment,  
Delhi.
- (v) Ms. Bharti Chaturvedi  
CHINTAN, Delhi.
- (vi) Dr. Anup Ghosh  
Professor, IIT, Delhi
- (vii) Shri T.K. Bandhopadhyay,  
Indian Centre for Plastics in the Environment  
(ICPE), Delhi.
- (viii) Dr. Manoranjan Hota  
Director, MoEF Convenor

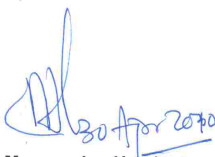
2. The Terms of Reference for the Committee will be as follows-

- (i) To examine the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009 with reference to various suggestions/ comments received.

-2-

- (ii) To review the cross-national experience with recent policies to deal with plastic carry bags and recycling.
  - (iii) To suggest economic instruments, including fiscal measures, to promote environment friendly alternatives to plastic carry bags.
3. The tenure of the Committee shall be two months. The Committee may co-opt industry representatives or other experts, if required.
  4. Meetings of the Committee shall be organized by the Ministry of Environment & Forests.
  5. TA/DA and sitting charges for non-official members for attending meetings of the Committee will be met by the Ministry of Environment and Forests as per the Government of India rules.

This issues with the approval of the Competent Authority.

  
(Dr. Manoranjan Hota)  
Director

To:

All Members of the Committee.

Copy to:

PS to MEF/PPS to Secretary (E&F)/PPS to SS (RHK)/ DD(RBL)/SO  
(HSMD)/IFD/GC/Spare Copy.

  
(Dr. Manoranjan Hota)  
Director

Annexure-II

**Minutes of 1<sup>st</sup> Expert Committee to examine the comments and suggestions including economic instruments in the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009, held on May 6, 2010 at 11.00 A.M.**

The 1<sup>st</sup> Expert Committee meeting was held on 6<sup>th</sup> May, 2010 to examine the comments and suggestions including economic instruments in the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009. The list of participants is attached.

2. Dr. Manoranjan Hota, Director, MoEF gave a brief background of the Recycled Plastics Manufacture and Usage Rules, 1999 (as amended in 2003) and the salient features of the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009 vis-à-vis the outcome and directions of the Delhi High Court pertaining to plastic carry bags. He further informed the Members that, in response to the draft Rules, MoEF has received more than 500 suggestions/comments from various stakeholders such as Industries, Industries Associations, NGOs, Experts etc. He urged the members of the committee to offer their suggestions and comments so as to finalize the notification. A copy of the comments, compiled by the MoEF, was circulated among the Members.

3. A detailed discussion was held on the draft notification and the following were the outcome:

- i. There was an agreement to the title: “Plastics (Manufacture, Usage and Waste Management) Rules, 2009”.
- ii. Some Members were of the view that the present notification is only for plastic carry bags and need to cover all categories of plastics. However, some members were of the view that encompassing all categories of plastics would not be ideal or practical, as each category has its own limitations and therefore, it is advisable to make Rules, categories wise, such as present notification for carry bags. Government may consider for bringing out notification(s) for other categories of plastics, in phase manner.

- iii. The Committee, keeping these different perceptions in view, agreed for taking-up the plastic carry bag as the template. This template could be replicated for other categories of the plastics, if need be.
- iv. The Members were of view that there is need for making provisions for waste management, fiscal incentives/instruments, in the Rules. Therefore, the following tasks and time schedules were agreed to:-

Task	Member(s)	Time frame
Input on waste management	Shri Ravi Aggarwal	May 20, 2010
Input on Fiscal incentives/instruments	Dr. Rohini Somanathan	May 20, 2010
The draft Rules to be circulated to all the Members.	Shri Ravi Agarwal and Shri Ritwick Dutta	May 20, 2010

- v. The first draft will be discussed in the next meeting scheduled to be held on at 2.30 P.M. of 21<sup>st</sup> May, 2010.
- vi. The Committee members had requested for photocopy of all the comments received by the MoEF and also the compiled copy.
4. M/s Earthsoul India Pvt. Ltd. was invited for the presentation on “Bio-based Products”. M/s Earthsoul India Pvt. Ltd, represented by Mr. Parses Billmorea, circulated a copy of the presentation in the Committee. During interaction and discussion, one member raised the issue pertaining to testing facility for biodegradable plastics and its disposal at landfill sites. Shri Perses Bilimoria responded that there is no testing facility available, at present, in the country for biodegradable/compostable plastics and there are no adequate landfill facilities available for bio-composting. However, one member mentioned that CIPET, Chennai has the testing facility for the bio-compostable plastics.

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**List of Participants**

1. Dr. Rohini Somanathan Professor, Department of Economics, Delhi School of Economics, University of Delhi, Delhi-110007
2. Prof. Anup K. Ghosh, Associate Dean, Indian Institute of Technology Hauz Khas, New Delhi-110016
3. Shri Ravi Agarwal, Toxic Links, H2 (Ground Floor), Jungpura Extension, New Delhi-110014
4. Ms. Bharati Chaturvedi, Director, CHINTAN Environmental Research and Action Group, 238, Sidhartha Enclave, New Delhi-110014
5. Mr. Kushal P. S. Yadav, Centre for Science and Environment, 41, Tughlakabad Institutional Area, New Delhi-110062
6. Shri T.K. Bandhopadhyay, Indian Centre for Plastics in the Environment, (ICPE), 1009, Vijya Building, 10<sup>th</sup> Floor, 17, Barakhamba Road, New Delhi- 110001.
7. Shri Ritwick Dutta, Lawyer, N-71, Lower Ground Floor, Greater Kailash – I, New Delhi
8. Shri Perses Bilimoria, Earthsoul India Pvt. Ltd., 9 SeaLand, 4th Floor, 41 Cuffe Parade, Mumbai, Pin : 400 005
9. Dr. Manoranjan Hota, Director, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi – 110 003
10. Dr. R. B. Lal, Deputy Director, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi – 110 003

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**Minutes of 2<sup>nd</sup> Expert Committee to examine the comments and suggestions including economic instruments in the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009, held on May 21, 2010 at 2.30 A.M.**

The 2<sup>nd</sup> Expert Committee meeting was held on 21<sup>st</sup> May, 2010 to examine the comments and suggestions including economic instruments in the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009. The list of participants is attached.

2. As decided in the 1<sup>st</sup> meeting, based on the draft notification and the comments received to this draft notification, Shri Ritwick Dutta circulated a draft for discussion in the Committee. The Committee has discussed each clause and have agreed to the following:-

- (a) Clause 2(b) may be read as: “the manufacturer shall ensure that there shall not be any plastic bags in the market other than those of the specified materials, thickness, size and quality as referred to in rule 5.”
- (b) Clause 3 may include the definitions of carry bags which may be read as “carry bags means plastic bags which have self carrying features for carrying commodities and made of LDPE, HDPE, LDPEE & PP.”
- (c) Definition of plastic & Virgin plastic may be as per BIS specification.
- (d) The definition of food grades may be considered, preferably from the Vocabulary of BIS or ISO Standards.

3. Clause 5 may be read as:

**Conditions.-** While during course of manufacture, sell, stock, distribution and use plastic carry bags, pouches and multilayered packaging the following by conditions shall fulfilled, namely: –

- (a) "carry bags" made of virgin plastics shall be in natural shade;
- (b) no person shall use carry bags made of recycled plastics or biodegradable plastics for storing, carrying, dispensing or packaging of food stuffs;
- (c) carry bags made of recycled plastics, biodegradable plastics and compostable plastics shall use pigments as stipulated in BIS standard IS 9833:1981;
- (d) no person shall manufacture, stock, distribute or sell carry bags made of virgin or recycled plastics or bio-degradable plastics, which are less than 12x18 inches (30X45 cms) in size and less than 40 microns in thickness;

*(Although this specifications were agreed to but was decided to deliberate the issue in the next meeting).*

- (e) no person shall manufacture carry bags or pouches or multilayered packaging from compostable (in lieu of biodegradable)\_ plastics unless these meet the Bureau of Indian Standards' specifications: IS/ISO 17088:2008 entitled "Specifications for Compostable Plastics".
  - (f) no person shall manufacture, stock, distribute or sell non-recyclable laminated plastic or metallic pouches, multilayered packaging's, and other non-recyclable plastics. *(This clause will be discussed in the next meeting)*
4. It was, unanimously agreed in the first meeting on the title of Notification "Plastics (Manufacture, Usage and Waste Management) Rules, 2009. However, some members were of the view to revisit the title in the next meeting.
5. With regard to non-recyclable laminated plastic or metallic pouches, multilayered packagings, and other non-recyclable plastics, it was decided that: (a) to invite representatives from Industries Association/Packaging Industries Association to make a presentation on the use of multilayered laminated pouches (b) to invite Dr. T.K. Bandhopadhyay, Member of the Committee to share his experience & expertise on the recycling of the laminated pouches; and (c) invite Institute of Packaging, as an expert.

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**List of Participants**

1. Shri Ravi Agarwal, Toxic Links, H2 (Ground Floor), Jungpura Extension, New Delhi-110014
2. Ms. Bharati Chaturvedi, Director, CHINTAN Environmental Research and Action Group, 238, Sidhartha Enclave, New Delhi-110014
3. Mr. Kushal P. S. Yadav, Centre for Science and Environment, 41, Tughlakabad Institutional Area, New Delhi-110062
4. Dr. T.K. Bandhopadhyay, Indian Centre for Plastics in the Environment, (ICPE), 1009, Vijya Building, 10<sup>th</sup> Floor, 17, Barakhamba Road, New Delhi- 110001.
5. Dr. Manoranjan Hota, Director, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi – 110 003
6. Dr. R. B. Lal, Deputy Director, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi – 110 003

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**Minutes of 3<sup>rd</sup> Expert Committee to examine the comments and suggestions including economic instruments in the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009, held on June 25, 2010 at 11.00 A.M.**

The 3<sup>rd</sup> Expert Committee meeting was held on 25<sup>th</sup> June, 2010 to examine the comments and suggestions including economic instruments in the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009. The list of participants is attached.

2. Dr. T.K. Bandhopadhyay, Member of the Committee had made a presentation on various technologies of recycling of the plastics vis- a- vis various uses of plastic wastes such as fuel, cement kiln, road construction, mechanical recycling such as moulding into compressed board/lumber etc.

3. Dr. N. C. Saha, Director of Indian Institute of Packaging, who was invited as an expert, facilitated the discussion. He gave an overview of the composition of multilayered packaging, its content, analysis and recycling. He was of the view that the multilayered packaging, per se, could be recycled. Therefore, the draft Rules in the present form does not construe banning the multilayered packaging. However, keeping the apprehension of many industries in view, he suggested that Clause 5(f) of the draft Rules may be suitably worded for more clarity.

4. The committee invited FICCI, on behalf of the Industries Association/Packaging Industries Association, to make a presentation on the use of multilayered laminated pouches. However, they could not make the presentation due to non-arrival of their expert. The representative from FICCI requested the committee to give another opportunity for the presentation. The members of the committee were of the view that FICCI may provide written statements for consideration of the committee.

5. The committee had discussed the draft Rules, clause wise, and has agreed to the following:-

- (a) Clause 2(b) “the manufacturer shall ensure that there shall not be any plastic bags in the market other than those of the specified materials, thickness, size and quality as referred to in rule 5,” may be deleted from the draft notification, in view of that this has been covered in clause 5.
- (b) Since BIS has developed protocols for “compostable plastics”, the terminology “compostable” may be used in place of “biodegradable”. Therefore the word “biodegradable plastics” may be replaced by “compostable plastics” and the clause 3(b) may be deleted.
- (c) The Extended Producer’s Responsibility (EPR) may be included in the Rules so as to ensure that plastic wastes are channelized through registered recyclers.
- (d) Clause 5 (f) “no person shall manufacture, stock, distribute or sell non-recyclable laminated plastic or metallic pouches, multilayered

packaging's, and other non-recyclable plastics" may be deleted from clause 5. This may be suitably worded and may be made as a separate clause.

6. The committee was informed that BIS, in its recent meeting, had reviewed the BIS specification: IS 14534: 1998 "the guidelines for recycling of plastics". Therefore, the committee was of the view this fact may be checked up from the BIS and the revised guidelines may be incorporated in the draft Rules.
7. The Committee was of the view that the Recycler of the Plastic wastes to be registered with SPCBs/PCCs. Therefore, a separate clause for the waste management may be added.
8. As discussed in the first meeting, the inputs with respect to fiscal instrument was to be given by Dr. Rohini Somanathan. In the absence of such inputs and that there may be a necessity for consulting the Ministry of Finance, the committee was, therefore, of the view to finalize the draft Rules by making an enabling provision for fiscal instruments. The committee, however, will finalize the fiscal instruments, based on the inputs from Dr. Rohini Somanathan for further necessary action. Keeping this in view, the members were, therefore, of the view that the tenure of the committee may be extended by one more month.
9. The committee requested Mr Ritwick Dutta to make a revised draft incorporating the suggestions and views and so as to circulate to all the members of the committee. This revised draft will be finalized in the next meeting, scheduled to be held on 2<sup>nd</sup> July 2010.
10. It was decided to give another opportunity to FICCI for making a presentation in the 4<sup>th</sup> Meeting of the Expert Committee which will be held on July 2, 2010 at 2:30 PM in the MoEF.

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**List of Participants**

1. Shri Ravi Agarwal, Toxic Links, H2 (Ground Floor), Jungpura Extension, New Delhi-110014
2. Ms. Bharati Chaturvedi, Director, CHINTAN Environmental Research and Action Group, 238, Sidhartha Enclave, New Delhi-110014
3. Mr. Kushal P. S. Yadav, Centre for Science and Environment, 41, Tughlakabad Institutional Area, New Delhi-110062
4. Dr. T.K. Bandhopadhyay, Indian Centre for Plastics in the Environment, (ICPE), 1009, Vijya Building, 10<sup>th</sup> Floor, 17, Barakhamba Road, New Delhi-110001
5. Shri Ritwick Dutta, Advocate, N-71, Lower Ground Floor, Greater Kailash – I, New Delhi
6. Dr. N. C. Saha, Director & Principal Executive Officer, Indian Institute of Packaging, E-2, MIDC, Chakala, Andher (East), Mumbai- 400093
7. Ms Rita Roy Choudhury, Director, FICCI, Tansen Marg, New Delhi
8. Ms Suchismita Mukhopadhyay, Assistant Director, FICCI, Tansen Marg, New Delhi
9. Dr. Manoranjan Hota, Director, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi – 110 003
10. Dr. R. B. Lal, Deputy Director, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi – 110 003

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**Minutes of 4<sup>th</sup> Expert Committee to examine the comments and suggestions including economic instruments in the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009**

The 4<sup>th</sup> Expert Committee meeting was held on 2<sup>nd</sup> July, 2010 to examine the comments and suggestions including economic instruments in the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009. The list of participants is annexed. The minutes of the 3<sup>rd</sup> meeting of the Expert Committee were confirmed.

2. Mr. P. Das Gupta, on behalf of FICCI, and the Packaging Industries Association made a presentation on the issues of multilayer packaging, its recycling and waste management.

3. Mr. Ritwick Dutta had revised the draft Rules as per the discussion held in the 3<sup>rd</sup> meeting of the Committee. The Committee discussed the revised draft, clause wise, and agreed to the following:-

- a. The title of the Rule may be called “Plastic Wastes (Management and Handling) Rules, 2010.
- b. Clause 2(g)- In the definition of Extended Producer Responsibility (EPR), the words “carry bags” may be deleted.
- c. The definition of multilayered packaging may be given.
- d. Clause 2(k)-The title of the definition “post consumer plastic waste” may be replaced by “plastic wastes”.
- e. The word “strictly, in the first line of the clause 6, may be deleted. The word “amended from time to time” may be added in the last line of clause 6.
- f. The last line of Clause 7(a) “along with indication of the percentage of use of recycled material” may be deleted.
- g. A separate clause of “Annual Report” may be added to the Rules.

4. The provisions under the clause “Plastic Waste Management” was revised, which may be read as follows:-

10. (1) (a) Any recycling, recovery or disposal of plastic waste has to be done as per the regulation and standards and stipulated by the Central Government, from time to time.

(b) Recycling of plastics shall be done in accordance with the BIS Specification: IS 14534:1998 titled “The Guidelines for the recycling of plastics” and as amended from time to time.

10. (2) For the purposes of Waste Management, the responsibilities of various stakeholders shall be as follows:
- (i) Responsibilities of the Municipality:
    - a. To ensure and facilitate setting up adequate number of collection centers, proper segregation, safe transportation and proper disposal of plastic wastes.
    - b. To ensure that no damage is caused to the environment during the storage, transportation and disposal of plastic wastes.
    - c. To ensure that adequate awareness is created among manufacturers, retailers and consumers.
    - d. To engage agencies/groups working in waste management.
  - (ii) Responsibilities of the Recycler:
    - (a) To ensure that the facilities and recycling process are in accordance with the standards laid down by the BIS and in compliance with the existing Rules under the Environment (Protection) Act, 1986 and as amended from time to time.
    - (b) To ensure that the residue generated from recycling process, are disposed of in compliance with the existing Rules under the Environment (Protection) Act, 1986 and as amended from time to time.
  - (iii) Responsibilities of the Manufacturer:
    - (a) To ensure that the manufacture of products is as per specifications provided in the said Rules and other Rules in force.
    - (b) To ensure that each product is properly labelled and has all the details as required under the clause 6 (c) of the said Rules.
    - (c) To ensure the establishment of collection centers, either individually or collectively and notifying to the municipalities.
    - (d) To ensure the collection of plastic waste, generated from the 'end of life' of their products in line, with the principle of 'Extended Producer Responsibility' (EPR), and to ensure that such plastic waste are channelized to registered recycler.
    - (e) To coordinate and work in association with municipalities, in line with the principle of 'Extended Producer Responsibility'.
    - (f) To engage/agencies groups working in waste management.
  - (V) Responsibilities of the Retailer:
    - (a) To ensure sale of the plastic carry bags and multilayered packaging are properly labeled, as per the stipulations under the said Rules.
5. Economic Instruments: The Central Government may formulate financial mechanisms, involving incentives or disincentives, for plastic carry bags, and multilayered packaging for its waste management.

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**List of Participants**

1. Shri Ravi Agarwal, Toxic Links, H2 (Ground Floor), Jungpura Extension, New Delhi-110014
2. Ms. Bharati Chaturvedi, Director, CHINTAN Environmental Research and Action Group, 238, Sidhartha Enclave, New Delhi-110014
3. Mr. Kushal P. S. Yadav, Centre for Science and Environment, 41, Tughlakabad Institutional Area, New Delhi-110062
4. Dr. T.K. Bandhopadhyay, Indian Centre for Plastics in the Environment, (ICPE), 1009, Vijya Building, 10<sup>th</sup> Floor, 17, Barakhamba Road, New Delhi-110001
5. Shri Ritwick Dutta, Advocate, N-71, Lower Ground Floor, Greater Kailash – I, New Delhi
6. Dr. N. C. Saha, Director & Principal Executive Officer, Indian Institute of Packaging, E-2, MIDC, Chakala, Andher (East), Mumbai- 400093
7. Ms Arti G. Shankar, FICCI, Tansen Marg, New Delhi
8. Mr. P. Das Gupta, Hindustan Uniliver Limited (FICCI Representative)
9. Mr Jasvir Singh, ITC Limited (FICCI Representative)
10. Dr. Manoranjan Hota, Director, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi – 110 003
11. Dr. R. B. Lal, Deputy Director, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi – 110 003

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**Minutes of 5<sup>th</sup> Expert Committee to examine the comments and suggestions including economic instruments in the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009**

The 5<sup>th</sup> Expert Committee meeting was held on 14<sup>th</sup> July, 2010 to examine the comments and suggestions including economic instruments in the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009. The list of participants is annexed.

1. The minutes of the 4<sup>th</sup> meeting of the Expert Committee were confirmed.
2. The Committee further discussed the draft notification including the issue of Economic Instruments and agreed to the following:-
  - a. Clause 2(q) - The title of the definition “waste management” may be replaced by “plastic waste management” and “recovery and composting” may be added in the definition.
  - b. Clause 4(a) – the word “white” may be added and clause may be read as “Carry Bags made of virgin plastics shall be in white or natural shade”.
  - c. Clause 5 –Clause 5 may be read as “ No persons shall manufacture, stock, distribute or sell multilayer plastics including material unless it complies with the provision of Rule (6)” by adding “ plastics including” and deleting “packaging”.
  - d. Clause 6(i)(d) –Clause may be read as “ to engage agencies / groups working in waste management including informal sector” by adding “ including informal sector” in the last para.
  - e. Clause 6(iii)(f) –Clause may be read as “ to engage agencies / groups working in waste management including informal sector” by adding “ including informal sector” in the last para.
  - f. Clause 8(i)(c) –By adding “plastics including material” and deleting “packaging”, the clause may be read as “each carry bag and multilayered plastics including plastic material shall be printed bilingually (English or local language) with the following information namely:-
    - (i) Name and Address of manufacturer;
    - (ii) Registration number granted by concerned State Pollution Control Board Committee.
  - g. Clause 8(ii) –Clause may be read as “every manufacturer shall mark each multilayer plastics including material so as to ascertain that it is



recyclable” by adding “plastics including material” and deleting “packaging”.

- h. Clause 11 i.e. Economic Instrument was deliberated at length. The members were of the view that a study needs to be undertaken to quantify and prescribe incentives/disincentives for the use of plastic carry bags, multilayered plastics and their waste management. The members were therefore, of the view that an enabling provision may be made in the proposed Rules and thereafter the State Governments may be empowered to decide the type of incentives/disincentives. MoEF may commission a study to prescribe the fiscal incentives/disincentives, which could be notified as an Office Order. Keeping this in view, the following suggestions were made:-

Clause 11(a) - no carry bags shall be made available free of cost to the final consumers. State Governments shall determine minimum price for carry bags which reflect both their material cost and environmental impact.

Clause 11 (b) – those responsible for setting of waste collection centers, as per clause 6, shall offer prices for carry bags and multilayered plastics that provide adequate incentives to ensure collection.

3. Ms. Bharati Chaturvedi and Mr. Kushal P. S. Yadav, volunteered to provide inputs on economic incentives/ disincentives, pricing etc., which could be further discussed for finalization in the next & last meeting of the Committee on 28<sup>th</sup> July, 2010 at 2:30 P.M.

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**List of Participants**

1. Dr. Rohini Somanathan, Professor , Delhi School of Economics, Delhi
2. Shri Ravi Agarwal, Toxic Links, H2 (Ground Floor), Jungpura Extension, New Delhi-110014
3. Ms. Bharati Chaturvedi, Director, CHINTAN Environmental Research and Action Group, 238, Sidhartha Enclave, New Delhi-110014
4. Mr. Kushal P. S. Yadav, Centre for Science and Environment, 41, Tughlakabad Institutional Area, New Delhi-110062
5. Dr. T.K. Bandhopadhyay, Indian Centre for Plastics in the Environment, (ICPE), 1009, Vijya Building, 10<sup>th</sup> Floor, 17, Barakhamba Road, New Delhi-110001
6. Shri Ritwick Dutta, Advocate, N-71, Lower Ground Floor, Greater Kailash – I, New Delhi
7. Dr. Manoranjan Hota, Director, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi – 110 003
8. Dr. R. B. Lal, Deputy Director, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi – 110 003

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**Minutes of 6<sup>th</sup> Expert Committee to examine the comments and suggestions including economic instruments in the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009**

The meeting of the 6<sup>th</sup> Expert Committee was held on 28<sup>th</sup> July, 2010 to examine the comments and suggestions to the draft Plastics (Manufacture, Usage and Waste Management) Rules, 2009. The list of participants is annexed.

1. The minutes of the 5<sup>th</sup> meeting of the Expert Committee were confirmed.
  
2. The Committee were of the view that while extensive discussion with the Industries Association/Packaging Industries Association, Indian Institute of Packaging and expertise of the Committee members, the draft was further improvised. The Committee was of the view that issues relating to “economic instruments” need to be discussed to arrive at a conclusive formulation with the additional inputs from Dr. Rohini Somanathan. The Committee discussed substantial issues. Dr. Rohini Somanathan had volunteered to make further editing.

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**List of Participants**

1. Prof. Anup K. Ghosh, Associate Dean, Indian Institute of Technology Hauz Khas, New Delhi-110016
2. Shri Ravi Agarwal, Toxic Links, H2 (Ground Floor), Jungpura Extension, New Delhi-110014
3. Ms. Bharati Chaturvedi, Director, CHINTAN Environmental Research and Action Group, 238, Sidhartha Enclave, New Delhi-110014
4. Mr. Kushal P. S. Yadav, Centre for Science and Environment, 41, Tughlakabad Institutional Area, New Delhi-110062
5. Dr. T.K. Bandhopadhyay, Indian Centre for Plastics in the Environment, (ICPE), 1009, Vijya Building, 10<sup>th</sup> Floor, 17, Barakhamba Road, New Delhi-110001
6. Dr. Rohini Somanathan, Professor , Delhi School of Economics, Delhi
7. Dr. Manoranjan Hota, Director, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi – 110 003
8. Dr. R. B. Lal, Deputy Director, Ministry of Environment and Forests, Paryavaran Bhawan, CGO Complex, New Delhi – 110 003

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Annexure: III

## **Comments of Dr. N. C. Saha, Director, Indian Institute of Packaging**

----- Original Message -----

From: DirectorIIP <director-iip@iip-in.com>

Date: Saturday, August 14, 2010 16:26

Subject: Re: Views on stricter limits with regard to the size and other specification for the materials using plastic packaging

To: Manoranjan <hota@nic.in>

Dear Dr. Hota,

I am sorry for the delay of replying your query.

Meanwhile, Dr. Swaminathan had discussed with me over telephone twice on this issue. She has emphasised that there is a need to specify the limit of size of the pouches, made of multilayered structure. In this context, I have informed her over telephone that this would be difficult for me to comment. However, I can put forward my comment by considering the technical reasons:

1. The pouches made of multilayered packaging materials are of having different combinations. As per the definitions of multilayered structure, the material could be made of more than one layer of packaging materials. and the individual layers could also be different.

2. The multilayer packaging material could be made of either in laminate form or as co-extruded structure form.

In case of co-extrusion, the different layers of polymeric materials of having different thicknesses are co-extruded together to form a single layer structure. However, the multilayer packaging materials made of in laminate form where the individual layers could be either of polymeric materials or a combination of polymeric materials /paper or polymeric material + paper layer + aluminium foil and the two or three or four layers of materials are joined together with the help of bonding agent like adhesives. Here, the thicknesses of individual layer of material will vary.

However, the total thicknesses of the laminate is developed by considering the end use application. In case of food and pharmaceutical products, the thicknesses will vary depending upon the shelflife requirement of the products.

3. The total thickness of the laminate structure play a vital role for the determination of shelflife of the product because, higher the thickness of the laminate, lesser amount of permeation of moisture vapour and oxygen gas into the package, resulting into longer shelflife of processed food products. Similarly, lesser thickness of multilayer structure will permeate more amount of moisture and oxygen gas molecules into the package which will react into the processed foods caused to shorter shelflife of the product. Since, the requirement of shelflife of the individual product depends on the individual product characteristics, consumers demand and the market requirement.

Hence, It becomes very difficult to make any uniform norms in terms of thickness for the shelflife of all kinds of processed food products. Due to this fact, we find that the product like dry fruit might be having shelflife of 6 months whereas edible oil will have maximum 3-4 months shelflife in a pouch of having same thickness. However, we can also do the engineering on the packaging materials to increase the barrier properties either by way of different combinations in case of flexible material or by way of choosing the different alternate packaging material so that the

desired shelf life of the processed food products can be achieved.

Considering this background, this would be very difficult to fix any kind of limit for the thickness of pouches used for the packaging of consumer goods like carry bag where the end use application is completely different. Carry bags are used only to carry the commodity from one place to another and time consumed for travelling is also limited. Moreover, in this case, we are not concerned about the shelflife or storage life of any commodity.

Similarly, the sizes of pouches will also vary. A particular size of pouch could pack 10 gms or 25gms or 50 gms products. This will depend on the **bulk density** of the individual product. For example, the product like corn flakes with lighter density will occupy more space in a package whereas rice or dal or any cereals are having comparatively heavier density product. And hence, these products will occupy lesser space in the same size of pouch. As a result, the size of the pouches are determined depending on the product's bulk density, consumers preferences as well as the economic aspect.

In general, the size of the pouches are made according to the exact requirement. However, there are certain exceptions like potato chips might be having a weight of 40 gms but the size of the pouch is bigger because the chips are packed in a pouch with vacuumisation and then followed by the filling of inert gases like nitrogen in order to restrict the fat oxidation reaction and thus to enhance the shelflife of potato chips.

Due to this fact, the pouches made of either single layer or multilayer packaging materials for the packaging of commodity goods whose sizes can not be limited like carry bag.

Moreover, any consumer goods are packed by following the **WEIGHTS and MEASURES Act, 1977**, Ministry of Public Distribution and consumer affairs, Govt of India where either mass of the product or volume of the products are considered.

**Based on the above said technical reasons, I personally feel that for the multilayer packages, the norms like limited sizes and thickness as followed for carry bags, can not be applicable due to the fact that the end use application for both the items are completely different.**

Hope, you will find this matter in order.

Thanking you,

**N.C.SAHA**  
**DIRECTOR**

**Draft Rules recommended by the Committee**

[To be published In the Gazette of India, Part-II, Section-3, Sub-section (ii)]

**Ministry of Environment and Forests**

**NOTIFICATION**

**New Delhi, the..... 2010**

**Draft notification**

**Short title and commencement-**

1. (a) These rules may be called the Plastic Waste (Management and Handling) Rules, 2010
- (b) They shall come in to force, in supersession of the Recycled Plastics Manufacture and Usage Rules, 1999 (as amended in 2003), on the date of their final publication in the Official Gazette.
2. **Definitions.-** In these rules, unless the context otherwise requires, -
  - (a) "**Act**" means the Environment (Protection) Act, 1986 (29 of 1986);
  - (b) "**Carry bags**" means plastic bags which have self carrying features commonly known as vest type bags or any other features used to carry commodities such as the "D" punched bags illustrated in the Annexure of these rules.;
  - (c) "**Commodities**" means articles, including but not limited to vegetables, fruits, pharmaceuticals, food grains etc;
  - (d) "**Compostable plastics**" means plastic that undergoes degradation by biological processes during composting to yield CO<sub>2</sub>, water, inorganic compounds and biomass at a rate consistent with other known compostable materials and does not leave visible, distinguishable or toxic residue;
  - (e) "**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);

- (f) “**Disintegration**” means the physical breakdown of a material into very small fragments;
- (g) “**Extended producer’s responsibility (EPR)**” means the responsibility of a producer/manufacturer of plastic carry bags and multilayered plastic pouches/packages for the environmentally sound management of the product until the end of its life. This responsibility also applies to all manufactures using such packaging.
- (h) “**Food-stuffs**” means ready to eat food products, fast food, processed or cooked food in liquid, powder, solid or semi-solid form;
- (i) “**Manufacturer**” means any producer who manufactures plastic carry bags, multilayered packaging, pouches, etc, or uses such materials in packaging of a product.
- (j) “**Multilayered plastics**” means any material having a combination of more than one layer of packaging material such as paper, paper board, polymeric materials, metalised layers or aluminium foil, either in the form of a laminate or co-extruded structure.
- (k) “**Plastic**” means material which contains as an essential ingredient a high polymer and which at some stage in its processing into finished products can be shaped by flow;
- (l) “**Plastic waste**” means any plastic product such as carry bags, pouches or multilayered packaging, which have been discarded after use or after their intended life is over;
- (m) “**Registration**” means registration of units manufacturing or recycling carry bags made of virgin or recycled plastics with the concerned State Pollution Control Board or Pollution Control Committee, as the case may be;
- (n) “**Virgin plastic**” means plastic material which has not been subjected to use earlier and has also not been blended with scrap or waste.
- (o) “**Waste management**” means the scientific reduction, reuse, recovery, recycling, composting or disposal of plastic waste;
- (p) “**Waste pickers**” means individuals or groups of individuals engaged in the collection of plastic waste.



### 3. Prescribed Authority:

The authority

- a. for enforcement of the provisions of these rules related to authorization, manufacture, recycling and disposal shall be State Pollution Control Boards and Pollution Control Committees in respect of Union territories;
- b. for enforcement of the provisions of these rules related to the use, collection, segregation, transportation and disposal of post consumer plastic shall be the concerned municipal authority/civic body;

### 4. Conditions.- During the course of manufacture, stocking, distribution, sale and use of carry bags including those made of multilayer plastics, the following conditions shall be fulfilled:

- a. carry bags made of virgin plastic shall be in white or without any added pigments and additives;
- b. no person shall use carry bags made of recycled plastics for storing, carrying, dispensing or packaging food stuffs;
- c. coloured carry bags made of recycled or compostable plastics shall be made using pigments stipulated in Bureau of Indian Standards' specifications: IS 9833:1981; as amended from time to time.
- d. no person shall manufacture, stock, distribute or sell any carry bags made of virgin or recycled or compostable plastic, which are less than 12x18 inches (30x45 cms) in size and less than 40 microns in thickness;
- e. no person shall manufacture, stock, distribute, or sell carry bags or multilayered packaging material unless it complies with Rule (5).

### 5. Plastic Waste Management:

- (a) Any recycling, recovery or disposal of plastic waste has to be done as per the regulations and standards and stipulated by the Central Government as amended from time to time.

(b) Recycling of plastics shall be done in accordance with the Bureau of Indian Standards Guidelines IS 14534:1998 titled “Guidelines for the recycling of plastics” as amended from time to time.

(c) Open burning of plastic waste shall not be permitted.

(d) The municipalities or civic agencies, as appropriate, shall have the overall responsibility for the setting up, operationalisation and coordination of the waste management system and for performing associated functions. They shall (i) ensure the safe collection, storage, segregation, transportation, processing and disposal of plastic wastes (ii) ensure that no damage is caused to the environment during this process (iii) facilitate the setting up of collection centres by manufacturers (iv) create awareness among all stakeholders about their responsibilities (v) engage agencies or groups working in waste management including waste pickers.

(e) In line with the principle of Extended Producer’s Responsibility (EPR), the manufacturer, collectively or individually, and in association with the municipality shall (i) be jointly responsible for the collection of plastic waste, as defined for the purpose of this law, (ii) ensure its channelization to recyclers (iii) finance and establish collection centres, either collectively or individually.

(f) Recyclers shall ensure that recycling facilities and processes are in accordance with the guidelines laid down by the BIS and in compliance with the rules under the Environment (Protection) Act, 1986, as amended from time to time.

(g) Recyclers shall ensure that the residues generated from recycling processes are disposed of in compliance with Schedule II (Management of Municipal Solid Wastes) and Schedule III (Specifications for Landfill Sites) of the

Municipal Solid Wastes (Management and Handling) Rules, 2000 under the Environment (Protection) Act, 1986, as amended from time to time.

**6. 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 Bureau of Indian Standards listed in the Annexure to these rules.

**7. Marking or Labelling:-**

Every manufacturer shall label or mark each carry bag as under:-

- (a) Each recycled carry bag shall bear a label “recycled” and shall conform to the Bureau of Indian Standards’ Specification: IS 14534: 1998 entitled "The Guidelines for Recycling of Plastics".
- (b) Each carry bag made from compostable plastic shall bear a label “compostable” and shall conform to the Bureau of Indian Standards’ Specification: IS/ISO 17088:2008 entitled “Specifications for Compostable Plastics”.
- (c) All multilayered packaging shall be labelled “recyclable”.
- (d) Plastic carry bags and multilayered packaging shall be printed in English or in the local language with the name, address and registration number of the manufacturer.
- (e) Retailers shall ensure that plastic carry bags and multilayered packaging sold by them are properly labelled, as per stipulations under these rules.

**8. Registration of Manufacturers and Recyclers-** The grant of a registration certificate is subject to the following conditions:

- (a) Any person manufacturing or proposing to manufacture carry bags and multilayered plastics shall apply to the State Pollution Control Board (SPCB) or Pollution Control Committee (PCC) of the Union territory concerned for the grant of registration or for the renewal of registration for the manufacturing unit using Form 1 appended to these rules;
- (b) Any person recycling or proposing to recycle carry bags or multilayered plastics or any plastic waste shall apply to the SPCB or PCC for grant of

registration or renewal of registration for the recycling unit using Form 2 appended to these rules;

- (c) No person shall manufacture carry bags or recycle plastic bags or multilayered plastics unless the occupier of the unit has registered the unit with the SPCB or PCC, as the case may be, prior to the commencement of production;
- (d) The SPCB and PCC shall not issue or renew a registration certificate for manufacturing or recycling 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);
- (e) Certificate of registration issued by the District Industries Centre or any other government agency authorised in this regard;
- (f) Proof of installed capacity of plant and machinery issued by the District Industries Centre or any other government agency authorised in this regard;
- (g) Every State Pollution Control Board or Pollution Control Committee shall take a decision on the grant of registration within 90 days of receipt of an application that is complete in all respects.
- (h) The registration granted under this rule shall be valid for a period of three years, unless revoked, suspended or cancelled; and registration shall not be revoked, suspended or cancelled without providing the manufacturer an opportunity for a hearing;
- (i) Every application for renewal of registration shall be made at least sixty days before the expiry of the validity of the registration certificate.

## 9. Economic Instruments:

- (a) **Fiscal Instruments:** The Central Government and all State Governments/UTs, shall consider the environmental costs of plastic products in determining appropriate tax rates for inputs into these products. Rates of excise for different products shall also be determined taking into account the extent of plastic packaging used in the manufacture of the product.
- (b) **Explicit pricing of carry bags:** No carry bags shall be made available free of cost by retailers to consumers. State Governments/Union Territories shall, within 90 days of notification of these rules, determine a minimum price for

carry bags which covers their material and waste management costs and, in addition, acts as a deterrent to their excessive use.

- (c) **Recycling incentives:** Those responsible for setting up waste collection centres, as per clause 5, shall offer prices for the collection of carry bags and multilayered plastics that provide adequate incentives for their collection.

**10. State Level Advisory Body:**

- (a) Each State shall constitute a multi-stakeholder advisory body under the chairmanship of the Secretary, Department of Urban Development, which shall meet at least once a year to monitor the implementation of these rules and take corrective action.
- (b) The Committee shall have members from State Department of Environment, SPCB/PCC, Urban Local Bodies, NGOs, Industries and reputed academic institutions. The committee may invite experts as and when necessary.

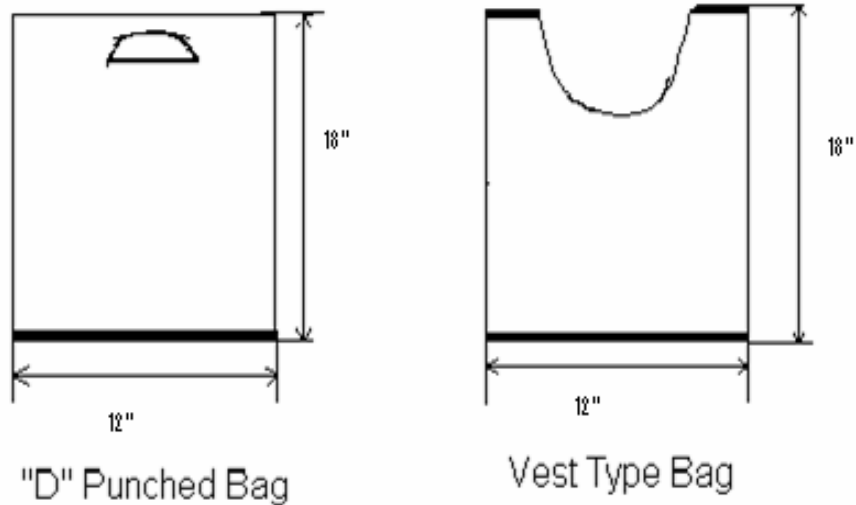
**11. Annual Reports:**

- (a) Each State Pollution Control Board shall prepare and submit to the Central Pollution Control Board an annual report on the implementation of these rules by September 30<sup>th</sup> each year.
- (b) The Central Pollution Control Board 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 December 30<sup>th</sup> each year.

[F. No. 17-2/2001-HSMD]

Rajiv Gauba  
Joint Secretary

**ANNEXURE 1**  
[See rule 2 (b)]



**ANNEXURE 2**

[See rule 6]

1.	IS/ISO 14851: 1999 Determination of the ultimate aerobic biodegradability of plastic material in an aqueous medium-method by measuring the oxygen demand in closed Respirometer
2.	IS/ISO 14852: 1999 Determination of the ultimate aerobic biodegradability of plastic material in an aqueous medium-method by analysis of evolved carbon dioxide
3.	IS/ISO 14853: 2005 Plastics- Determination of the ultimate aerobic biodegradability of plastic material in an aqueous system-method by measurement of biogas production
4.	IS/ISO 14855-1: 2005 Determination of the ultimate aerobic biodegradability of plastic material under controlled composting conditions-method by analysis of evolved carbon dioxide (Part-1: General method)
5.	IS/ISO 14855-2: 2007 Determination of the ultimate aerobic biodegradability of plastics under controlled composting conditions-method by analysis of evolved carbon dioxide (Part-2: Gravimetric method)
6.	IS/ISO 15985: 2004 Plastics- Determination of the ultimate anaerobic biodegradability and disintegration under high-solid anaerobic digestion conditions- methods by analysis of released biogas
7.	IS/ISO 16929: 2002 Plastics- Determination of degree of disintegration of plastic materials under defined composting conditions in a pilot scale test
8.	IS/ISO 17556: 2003 Plastics- Determination of ultimate aerobic biodegradability in soil by measuring the oxygen demand in a Respirometer or the amount of carbon dioxide evolved
9.	IS/ISO 20200:2004 Plastics- Determination of degree of disintegration of plastic materials under simulated composting conditions in a laboratory scale test

**FORM - I**  
[See rules 8]

APPLICATION FOR REGISTRATION OF A UNIT FOR THE MANUFACTURE  
OF PLASTIC CARRY BAGS AND MULTILAYERED PLASTICS

From: .....  
.....  
.....(Name and full address of the occupier)

To  
The Member Secretary,  
..... Pollution Control Board/Pollution Control Committee  
.....  
.....  
Sir,

I/We hereby apply for registration under rule 8 of the Plastic Waste  
(Management and Handling) Rules, 2010

<b>PART – A</b> <b>GENERAL</b>		
1.(a)	Name of the unit and location of the activity	
(b)	Address of the unit	
(c)	Registration required for manufacturing of : (i) Carry bags: virgin (ii) Carry bags: recycled (iii) Multilayered plastics	
(d)	Manufacturing capacity	
(e)	In case of renewal, previous registration number and date of registration	
2.	Is the unit registered with the DIC of the State Government/Union Territory? If yes, attach a copy.	



3.(a)	Total capital invested on the project	
(b)	Year of commencement of production	
4	List and quantum of products and by-products	
(a)	List and quantum of raw materials used	
(b)		
5	Furnish a flow diagram of manufacturing process showing input and output in terms of products and waste generated including for captive power generation and de-mineralized water	
6	Minimum sizes and thickness of carry bags to be manufactured. (this cannot be less than 12" x 18")	
7.	Status of compliance with rules 3,4,5,6,7 and 8.	
<b>PART – B</b>		
PERTAINING TO LIQUID EFFLUENT AND GASEOUS EMISSIONS		
8.	(a) Does the unit have a valid consent under the Water (Prevention and control of Pollution) Act, 1974 (6 of 1974)? If yes, attach a copy	
<b>PART – C</b>		
PERTAINING TO WASTE		
9.	Solid Wastes: (a) Total quantum of waste generated (b) Mode of storage within the plant (b) Provision made for disposal of wastes	
		Signature
		Designation
Place :		
Date :		

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**FORM - 2**  
[see rule 8)

**APPLICATION FORM FOR REGISTRATION OF FACILITIES  
POSSESSING ENVIRONMENTALLY SOUND MANAGEMENT PRACTICES  
FOR RECYCLING PLASTIC WASTE**

1.	Name and Address of the unit			
2.	Contact person with designation, Tel./Fax /email			
3.	Date Commissioned			
4.	No. of workers (including contract labour)			
5.	Consents Validity	a. Water (Prevention & Control of Pollution) Act, 1974; Valid up to _____  b. Air (Prevention & Control of Pollution) Act, 1981; Valid up to _____		
6.	Authorization validity			
7.	Manufacturing Process	Please attach a flow diagram of the manufacturing process flow diagram for each product.		
8.	Products and installed capacity of production (MTA)	Products	Installed capacity	
9.	Products manufactured during the last three years (as applicable)	Year	Product	Quantity
10.	Raw material consumed during the last three years (as applicable)	Year	Product	Quantity
11.	Water consumption	Industrial _____ m <sup>3</sup> /day Domestic _____ m <sup>3</sup> / day		
	Date until which water cess has been paid (if applicable)			

	Waste water generation as per consent _____m <sup>3</sup> /day	Actual waste water generated (average of last 3 months) Industrial _____m <sup>3</sup> /day Domestic _____m <sup>3</sup> /day			
	Waste water treatment (provide flow diagram of the treatment scheme)	Industrial Domestic			
	Waste water discharge	Quantity _____m <sup>3</sup> /day Location _____ Analysis of treated waste water for pH, BOD,COD, SS, O&G, any other parameter stipulated by SPCB/PCC (attach details)			
12	Air Pollution Control				
	a. Provide a flow diagram for emission control system(s) installed for each processing unit, utilities etc.				
	b. Details for facilities provided for control of fugitive emissions due to material handling, process, utilities etc				
	c. Fuel consumption	Fuel	Qty per day/month		
		(i)			
		(ii)			
	d. Stack emission monitoring	Stack attached to	Emission (SPM, SO <sub>2</sub> , NO <sub>x</sub> , etc.) mg/Nm <sup>3</sup>		
		(i)			
		(ii)			
	e. Ambient air quality	Location Results µg/m <sup>3</sup>	Parameters SPM, SO <sub>2</sub> , NO <sub>x</sub> , etc.) µg/m <sup>3</sup>		
		(i)			
		(ii)			
13.	Waste Management:	S No	Type	Category	Qty.
	a. Waste generation in processing plastic-waste	(i)			
		(ii)			
		(iii)			
	b. Waste Collection and transportation (attach details)				
	c. Waste Disposal details	S No	Type	Category	Qty
		(i)			

		(ii)			
	d. Provide details of the disposal facility or TSDF, whether the facility is authorized by SPCB/SPCC				
	e. Please attach analysis report of characterization of hazardous waste generated (including leachate test if applicable)				
14	Details of plastics-waste proposed to be taken in procured through sale, auction, contract or import, as the case may be, for use as raw material	(i) Name (ii) Quantity required /year			
15	Occupational safety and health aspects	Please provide details of facilities			
16	Remarks:				
	Has the unit adequate pollution control systems / equipment to meet the standards of emission / effluent.	If Yes, please furnish details			
	Whether unit is in compliance with conditions laid down in the Hazardous Waste Authorization	Yes/No			
	Whether the hazardous waste collection, and Treatment, Storage and Disposal Facility (TSDF) for are operating satisfactorily.	Yes/No			
	Whether conditions exist or are likely to exist of the material being handled / processed posing adverse immediate or delayed impacts on the environment.	Yes/No			
	Whether conditions exist (or are likely to exist) of the material being handled / processed by any means capable of yielding another material (e.g., leachate ) which may possess eco-toxicity.	Yes/No			
17.	Any other relevant information				

I hereby declare that the above statements /information are true and correct to the best of my knowledge and belief.

Signature

Date: \_\_\_\_\_ Name: \_\_\_\_\_

Place: \_\_\_\_\_ Designation: \_\_\_\_\_