

GREEN CHOICE PHILIPPINES

NELP-GCP-2003004

POLYETHYLENE & POLYPROPYLENE PACKAGING MATERIALS

Environmental Scenario

Polyethylene (PE) and Polypropylene (PP) plastics are two among the most versatile and economical materials that cover a wide range of application. It is noticeable that these plastics are replacing many traditional materials, especially in packaging applications.

In 2002, as per National Statistics Office data, total annual consumption of polyethylene was 279,602 metric tons, of which 86,899 metric tons came from domestic production and 192,703 metric tons were imported. Whereas in 1992, the total consumption was 135,983 metric tons.

In the case of polypropylene and using the same data source, the annual consumption of PP in 2002 totaled 267,651 metric tons, of which 150,825 metric tons were locally produced and 116,826 metric tons were imported. In 1992, total consumption of PP was 140,685 metric tons.

Last year, the local plastic industry estimated that resin consumption of the PE/PP packaging sector was approximately 259,945 metric tons. However, actual PE/PP consumption cannot be disaggregated.

While the use of plastics is increasing in almost all sectors of the economy, the most rapid growth is in packaging. As a result, there is an increasing pressure to minimize material requirement for packaging and to make them reusable, or at least recyclable to recover materials.

The Philippine Ecological Solid Waste Management Act of 2000 (R.A. 9003) mandates that the "DTI shall formulate and implement a coding system for packaging materials and products to facilitate waste recycling and reuse", as stated in Article 4 of Section 27.

Hence, the labelling scheme becomes imperative for a successful plastic recovery and recycling, ensuring that plastic containers and packaging materials can be identified so that they can be properly collected, sorted and recycled.

Definition of Terms

1. Plastic – a 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.
2. Polyethylene – plastic based on polymers of ethylene or copolymers of ethylene with other monomers, the ethylene being in the greatest amount by mass.
3. Polypropylene – plastic based on polymers of propylene or copolymers of propylene with other monomers, the propylene being in the greatest amount by mass.
4. PE-HD – High Density Polyethylene is a PE produced with small amounts of short chain branching of ethylene molecules with a density greater than 0.941 grams per cubic centimeter.
5. PE-LD – Low Density Polyethylene is a PE produced with branches of long chain ethylene molecules with a density between 0.090 and 0.925 grams per cubic centimeter.
6. PE-LLD – Linear Low Density Polyethylene is a PE containing sufficient short-chain branching as a result of co-polymerization of ethylene or butane or octane.
7. R. A. 9003 – Ecological Solid Waste Management Act of 2000
8. Non-rigid packaging – plastic that has a modulus of elasticity in flexure or, if that is not applicable, then in tension, not greater than 70 MPa under stated conditions.

9. Rigid Packaging – plastic that has a modulus of elasticity in flexure or, if that is not applicable, then in tension, greater than 700 MPa under stated conditions.
10. Semi-rigid Packaging – plastic that has a modulus of elasticity in flexure or, if that is not applicable, then in tension, between 70 MPa and 700 MPa under stated conditions.
11. Primary Packaging – packaging which has direct contact with the product
12. Secondary Packaging – packaging used to contain several individually-wrapped products
13. Tertiary Packaging – packaging used to transport, store and display several bundles of individually-wrapped products
14. Post-consumer Plastic Waste - any plastic that has entered the stream of commerce, served its intended purpose, and can be diverted for recycling. This includes residential, commercial and institutional plastic.
15. Industrial Plastic Wastes – include industrial scrap material like factory regrind and plant scrap
16. HACCP – Hazard Analysis and Critical Control Point, a pro-active process control system by which food quality is ensured.

Scope

These criteria shall apply to polyethylene and polypropylene packaging such as non-rigid, rigid and semi-rigid; with the application for primary, secondary, and tertiary packaging.

Green Choice Criteria

To carry the Green Choice Philippines seal, the product must meet the following requirements:

Product Requirements

1. The product shall be 100% recyclable.
2. When used as food primary packaging, the product shall conform to HACCP or any equivalent standards.
3. The product shall carry the following latest international Plastic Coding System for Resin Identification, appropriate for polyethylene and polypropylene packaging products:



4. The product shall carry instructions for proper disposal.
5. The production process, transport and disposal feature of the product shall meet the requirements of all applicable environmental laws and regulations.

Effectivity:

These product criteria shall take effect for three (3) years from the date of its approval, and subject to change or withdrawal by the *Green Choice Philippines – ELP Board*, if necessary at any period of time.

Evaluation and Validation Method:

1. Regarding criterion 1, the applicant shall submit a self-certification from the company CEO and certification from the supplier of raw materials pertaining to its recyclability. If further validation is required, DOST-ITDI shall test the product from the market or production line.

The applicant shall identify the recyclers of the product/s.

2. Regarding criterion 2, the applicant shall submit a certification from a HACCP certifying body or BFAD.

3. Regarding criterion 3, the applicant shall submit a sample of their product.

4. Regarding criterion 4, the applicant shall submit a sample of their product carrying any of the following statements or symbols:

- 5.1. Please recycle
- 5.2. Recycle
- 5.3. Please reuse
- 5.4. Do not litter
- 5.5. Please dispose off properly
- 5.6. Dispose off properly
- 5.7. Trash disposal symbol

5. Regarding criterion 5, the applicant shall submit applicable licenses, permits and certificates indicating the manufacturer's compliance with environmental regulations applicable to the area in which the plant is located.

References

ISO 472: 1999- 11-01 (Third Edition) – Plastics Vocabulary

ISO 1043-1:2001-12-15 (Third Edition) – Plastics Symbols

National Statistics Office Data

Philippine Plastics Industry Association Data

Association of Petrochemical Manufacturers of the Philippines

Codex Alimentarius, 2nd Edition (revised 1995), Food and Agriculture Organization of the United Nations, World Health Organization, Rome 1995