Ecodesign in food packaging

UNIT 2: International and European standards and directives for Ecodesign of food packaging

Quiz and Assignment

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Quiz

1) Place in the correct order, A, B, C the definitions of the following Ecodesign concepts:

- cradle to the grave
- cradle-to-cradle
- environmental issues

A. It is an integrated approach to the economic, industrial and social framework, which aims to create systems not only efficient but also, essentially, they do not produce waste.

B. Element of organization activities, products or services that can interact with the environment.

C. From Design to Waste Disposal.

2) ISO 14040 defines the life cycle as:

A. "consecutive and interconnected phases of a product system.

B. "consecutive and interconnected phases of a product system, from raw materials, the purchase of materials or the generation from natural resources to final disposal"

C. "the consecutive and interconnected phases of a product system, from the raw materials, the purchase of materials to the final disposal"

3) In design process of a packaging or packaging system:

A. Life-cycle packaging should be assessed, starting from the production of raw materials and using as much recycled material as possible for the manufacture of the product, transport and disposal of the product, its use to the consumer and ultimately the disposal of the waste.

B. The design process takes place from the production of the raw materials to the final product.

C. The design process takes place from the production of the raw materials to the final product, including labeling and transport for product disposal.

4) Waste disposal must follow the hierarchy recommended by the EU:

A. reuse of packaging, collection and recycling of waste, the use of them to obtain energy for incineration or other thermo-chemical processes, and finally, but not recommended, waste disposal at the landfill.

B. reuse of packaging, collection and recycling of waste.

C. reuse of packaging, collection and recycling of waste and finally disposal of waste at the landfill.

5) The Life Cycle Analysis (LCA) of a pack is:

A. A quantitative determination of how each phase of the packaging life cycle affects the environment.

B. A quantitative determination of how packaging and packaged product affect the environment.

C. A quantitative determination of how each phase of the packaging life cycle affects the environment to assess the environmental performance of the packaging life cycle.

6) The subsystems (components) of the packaging system to be analyzed (to be included in the boundaries of the packaging system) are:

A.
- Raw materials, energy and resources
- Assembling and packaging (filling activities, packaging for conveying and transporting the finished product).
- End of life and waste management

B.
- Production of packaging (production and transport of raw materials needed for primary, secondary and tertiary packaging, production and transport of raw materials for additional components (eg lid, seal, label, etc.), applied technological process (eg injection, extrusion, thermoforming, fusion, corrugation, foil, drawing, etc.).
- Distribution (handling, transport, refrigeration during transport and storage).
- End of life and waste management and composting; wastewater management.

C.
- Raw materials, energy and resources
- Production of packaging (production and transport of raw materials needed for primary, secondary and tertiary packaging, production and transport of raw materials for additional components (eg lid, seal, label, etc.), applied technological process (eg injection, extrusion, thermoforming, fusion, corrugation, foil, drawing, etc.).
- Assembling and packaging, (filling activities, packaging for conveying and transporting the finished product).
- Distribution of packaging (handling, transport, refrigeration during transport and storage).
- Use (storage, refrigeration and freezing by the consumer).
- End of life and waste management and composting; wastewater management.

7) The LCI-Live Cycle Inventory List includes quantification of inputs of materials, energy or chemicals, as well as material, energy, product, air, , soil, and water outflows that are relevant to the system packaging or analyzed packaging. The data for completing this list are provided by

A.

- Collect primary data on all the manufacturing steps included in the packaging production system.

- Collect necessary data from the INTERNET

B.

- Collect the specific data directly from packaging manufacturers, from their suppliers and from any other related activities.

- Data can also be obtained from industry practice guides and product specifications, from commercial databases, expert assessments, literature reviews and published study reports. Data should be used with caution and adapted to ensure representativeness.

C.

- Collect primary data on all the manufacturing steps included in the packaging production system.

- Collect specific data directly from packaging manufacturers, from their suppliers and from any other related activities.

- Data can also be obtained from industry practice guides and product specifications, from commercial databases, expert assessments, literature reviews, and published study reports. Data should be used with caution and adapted to ensure representativeness.

8) The completed MET matrix for the analyzed package, uses for:

A. Identification of significant environmental impacts, identifying the necessary measures to improve packaging and related services by reducing significant negative environmental impacts.

B. Identification of raw materials (M), energy (E) and waste and toxic emissions (T)

C. Waste, Emissions and Wastewater Management

9) The LCA analysis method, "CCaLC2", presented in Video UNIT 2.2 MODELING FIN is:

A. A simplified analysis method
B. A complete analysis method, complete with complete databases and case studies in several fields, including packaging.
C. A complete analysis method with comprehensive databases and case studies in several fields, including packaging, which for some technological processes require additional data collection.

Assignment

Develop at least one of the following tasks:

1. Present LCA subsystems and system boundaries for glass (see LCA Part 2 video).

2. Extract the manufacturing specifications, 1000ml PET bottle and 750ml glass bottle as shown in the LCA Part 1 video and make your own comments.