



# CERC ENVIS



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## GREEN PACKAGING

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## Foreword

Consumer Products are spreading fast all over the country markets, in general are also expanding exponentially. The resulting increase in packaging is accordingly going up at a rapid rate. Compared to what products we used to produce a few decades back, the “cosmetic” increase in packaging technology and materials is getting increasingly sophisticated. The urban consumer today is hardly different from a typical European or American consumer as far as the packaging systems are concerned.

With increase in packaging materials like paper, card-boards, aluminum foil / sheets, plastics of different varieties and some material containers etc, the total load of packing is increasing day by day. Packaging being a temporary phenomenon, once the core product is made use of, packaging becomes a waste. Thus, this increase in waste is the major environmental problem these days. The issues connected with this large problem of wastage from packing materials are required to be addressed without any further delay.

The Industry Council for Packaging and the environment is an important internationally recognized body that is responsible for the sustainability of materials and systems as far as the packaging industry is concerned. While some countries have started acting fast and effectively to reduce the environmental impact on packaging wastes, we in our country have to do a lot in this direction.

To understand the changes coming up, let us take an example, European Union Directive on the Packaging Waste aims to harmonize national measures in order to prevent or reduce the impact of packaging and packaging waste on the environment and to ensure the functioning of the internal market. It contains provision on the prevention of packaging waste, on the reuse of packaging and on the recovery and recycling of packaging.

European Union targets for 2008 recovery / recycling of packaging wastes : 60% glasses, papers boards, 50% of Metals, 22.5% of Plastics, and 15% of woods.

As part of ENVIS CERC issue of this month, it is hoped that greater awareness in reducing the packaging impacts on the environment will improve the conditions in due course. The most important thing to be considered all the time is that proper packaging design helps us to use the lowest possible amount of resources via highly functional materials being used in packaging technology.

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## GREEN PACKAGING

A tremendous increase in packaging wastes not only contributes to pollution but also causes ecological imbalance by draining natural resources. In fact, packaging waste accounts for a significantly quantity of solid wastes, particularly in urban areas. In different countries, packaging wastes generates an estimated 1 to 8 per cent of the garbage, says *iimm.org*. To help maintain ecological balance, many countries have adopted the “green packaging” practice.

### What is Green Packaging

Packaging that causes less damage to the environment is termed “green packaging”. The manufacture and the use of green packaging material puts less pressure on the natural resources. It involves cleaner production process and the use of biodegradable, recycled or recyclable materials. Some green packaging can be reused without any harm to the content.

The disposed biodegradable green packagings easily decompose and disappear into the soil or the atmosphere, without damage to the environment. Paper bag, bamboo basket, etc. are some commonly used biodegradable green packagings.

Recyclable packaging materials like glass metal, paper, cardboard, plastic, etc., can be processed further. Reusable packaging, like glass bottles, can itself be cleaned and reused.

### Why Green Packaging ?

The increasing importance of packaging in marketing and distribution of products can't be undermined. This has resulted in enhanced consumption of packaging materials as well as increased packaging waste. The consumption of packaging materials causes depletion of natural resources, higher energy consumption,



disposal problems and pollution off land, air and water. So, the need for “green packaging”.

### Green Packaging in India

The use of eco-friendly packaging materials is gaining momentum in India. Increased use of recyclable packaging material like paper, cardboard, tin, plastics, etc. can be seen in food and consumer goods packaging. The use of cardboard boxes and PVC crates instead of wooden ones for packaging horticultural products is being promoted by the government. Recently the Jammu and Kashmir Government decided to subsidize the cost of cardboard boxes used by fruit growers in the State, reports *The Indian Express*.

The Eco-mark scheme for packaging materials, introduced by the Central Ministry of Environment and Forests, is a milestone. The Ministry, in 1995, notified the Eco-mark criteria for packaging materials like paper boards, plastics and laminates in the Gazette of India. The incorporation of the Eco-mark requirements in 27 BIS standards, is under process, which includes waterproof paper, folding box board bitumen impregnated paper, grease proof paper, aluminium foil laminates, cartons for non-soapy detergents, composite containers for dry products

and corrugated fibre board boxes for packaging and transport.

### The International Move

Green packaging and the reduction of packaging wastes is attaining worldwide attention. Many developed countries have adopted ecolabelling for packaging materials. In 1991, Germany issued an ordinance on "Avoidance of packaging waste". The Packaging Council of Australia, along with other organizations, has developed an environmental code of practice for packaging. The code provides companies with guidelines to help evaluate the environmental impact of new packaging materials and products.

### What Needs to be Done

The success of "green packaging" and reduction of packaging wastes needs a concerted effort of the manufacturing sector, the government and consumers. The following steps can boost the efforts :

Avoiding over packaging by the

manufacturers ;

Reducing the weight of packaging materials without compromising on the product's protection and consumer safety ;

Development of more easily recyclable materials;

Development of new recycling technologies ;

Designing returnable packaging systems for both consumer and industrial goods ;

Use of packaging materials that can be easily incinerated without generating hazardous matters ;

Use off packages that are easy to recollect or sort ;

Ecolabelling of packaging plastics for easy recovery and recycling ;

Consumers should prefer to buy those products in which biodegradable, recycled or recyclable packaging materials have been used.

Ref : INSIGHT The Consumer Magazine, July-August, 2008.

## Feeling Helpless?

Medical and life insurance claims rejected? Fixed deposits/bonds not being paid up on maturity? Shares not received, dematted nor transferred? Builders asking you for a ride? Brand new fridge stopped making ice? Excess telephone/electricity bills? Problems you don't know how to solve? Contact us for help



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ADVT.

# ECOMARK CRITERIA FOR PACKAGING MATERIAL/PACKAGE

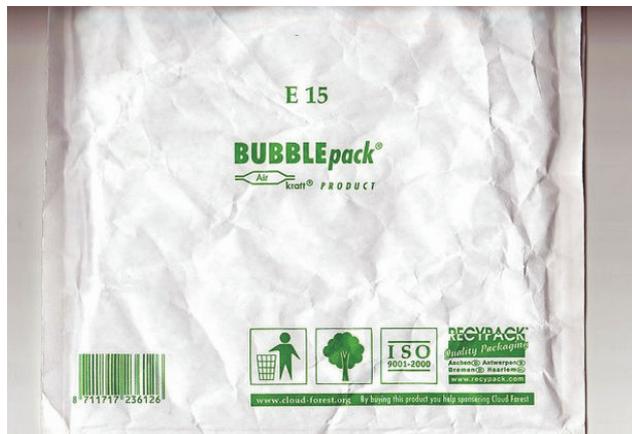
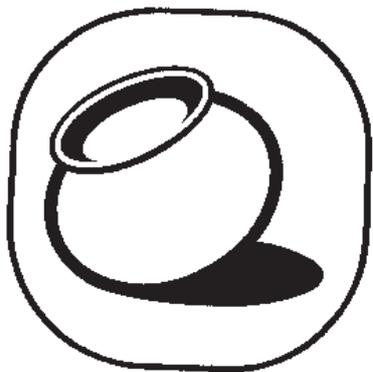
Paper Boards & Plastics excluding Laminates  
(The Gazette off India, Extraordinary, Part II-  
Section 3(i), No.364, Sept. 7, 1995)

## General Requirements :

All the packaging material/package manufactured shall meet relevant standards of BIS (Bureau of Indian Standards) pertaining to safety, quality and performance wherever applicable.

The manufacturer of packaging material/package must produce the consent clearance as per provisions of Water (Prevention and Control of Pollution) Act, 1974 and Air (Prevention and Control of Pollution) Act, 1981 along with the authorization, if required, under the Environment (Protection) Act, 1986 and the rules made there under to BIS while applying for Ecomark. Additionally the manufacturers shall also comply with the provisions under Prevention off Food Adulteration Act, 1954 and rules made there under, wherever necessary.

The packaging material/package may be sold along with instruction for proper use and mode of disposal so as to maximize product performance and minimize wastage. It shall also be suitably mentioned that ECOMARK label is applicable only to the packaging material/package, if content is not separately covered under Ecomark. It may



be stated that the Ecomark is applicable to the product or packaging material or both.

## Product Specific Requirements :

### Paper & Paper Boards

The paper and paper boards packaging materials/packages shall be manufactured from the following materials :

- a) 100 percent waste paper or agricultural/industrial wastes ;
- OR
- b) A minimum 60 per cent by mass of pulp made from materials other than bamboo, hardwood, softwood reed :

Note : The manufacturer shall provide documentary evidence by way of certificate or declaration to this effect to Bureau of Indian Standards while applying for Ecomark for requirements under (a) and (b) above.

- c) Paper and paper boards used for packaging of food materials shall be manufactured from virgin pulp and shall be free from dioxins. Printed surfaces off the paper shall not come into contact with the food and the maximum amounts of contaminants in paper intended to come into

contact with food shall not exceed the limits given in the following table when tested :

Contaminant	X	Y	Z (in mg/kg of paper)
Cadmium (Cd)	-	0.5	0.5
Chromium (Cr +6)	-	0.1	0.1
Lead (Pb)	-	3.0	3.0
Mercury (Hg)	-	0.3	0.3
Pentachlorophenol (PCP)	0.05	0.05	0.05
Polychlorinated biphenyls (PCBs)	2.0	2.0	0.5

X : Paper intended to come into contact with dry food

Y : Paper intended to come into contact with wet food and food with fatty surface

Z : Paper for filtration

The paper and paper boards packaging materials/packages shall conform to the relevant Indian Standards. The paper and paper boards used for the manufacture of



packaging materials/packages shall comply with the relevant Indian Standards.

#### Plastics (Excluding Laminates)

The plastic packaging materials/packages used for packaging of food, pharmaceuticals, cosmetics and drinking water shall comply with the relevant Indian Standards and shall be manufactured which shall comply with relevant Indian Standards.

The packaging material used for packaging of non-food, non-pharmaceutical, non-cosmetics and non-drinking water commodities shall be manufactured from recycled plastics which shall, apart from fillers and reinforcing agents, be a minimum of 30% by weight of compatible plastic wastes.

Note : The manufacturer shall provide documentary evidence by way of certificate or declaration to this effect to Bureau of India Standards while applying for Ecomark.

Ref : <http://www.cpcb.nic.in/Eco-mark%20Scheme/Packaging%20Materials.html>

## FACTS & FIGURES ..... DID YOU KNOW?

Packaging represents only 3 percent to 15 percent of a product's total environmental impact. The rest comes from the product itself, so protecting it from damage and premature disposal is very important to the planet.

Corrugated Packaging is made from a natural and renewable resource. After use, it becomes new paper again and thus benefits our environment.

Corrugated packaging contributes to forest growth by encouraging good forest management.

Today in Europe, forests grow faster than they are consumed. Paper manufacturers who own forests and who apply modern forestry practices, ensure that more trees are planted than are felled and preserve the biodiversity in the forests.

### Recycling is an excellent way of saving energy and conserving the environment

1 recycled tin can would save enough energy to power a television for three hours.

1 recycled glass bottle would save enough energy to power a computer for 25 minutes.

1 recycled plastic bottle would save enough energy to power a 60 watt light bulb for 3 hours.

70% less energy is required to recycle paper compared with making it from raw materials.



### Some Interesting Facts

Upto 60% of the rubbish that ends in the dustbin could be recycled

The unreleased energy contained in the average dustbin each year could power a television for 5,000 hours

On an average, 16% of the money you spend on a product pays for the packaging, which ultimately ends up as rubbish

As much as 50% of waste in the average dustbin could be composted

Upto 80% of a vehicle can be recycled

9 out of 10 people would recycle and ready to use in just six weeks

Glass is 100% recyclable and can be used again and again

Recycle paper produces 73% less air pollution than if it was made from materials

It takes 24 trees to make 1 tonne of newspaper  
Most families throw away about 40 kg of plastic per year, which could otherwise be recycled.

By recycling one tonne of paper, we save 18 trees, 29,000 litres of water, 1500 litres of oil, 2.5 cubic metres of landfill space and enough energy to heat an average size home for six months

Source : Packaging India, April-May, 2010,  
Compiled by Bhushan Surpur.

# REDUCING ENVIRONMENTAL IMPACTS OF PACKAGING - HINDUSTAN-UNILEVER INITIATIVE

HUL targets halve the waste associated with the disposal of its products by 2020.

## Reduce Packaging

By 2020 HUL will reduce the weight of packaging that it uses by a third through :

- Light weighting materials
- Optimising structural and material design
- Developing concentrated versions of its products
- Eliminating unnecessary packaging

## Reuse packaging

HUL will provide consumers with refills in its home and personal care portfolio to make it possible to reuse the primary pack.

## Recycle packaging

Working in partnership with industry, governments and NGOs, it aims to increase recycling and recovery rates on average by 5% by 2015, and by 15% by 2020 in our top 14 countries. For some this means doubling or even tripling existing recycling rates.



HUL will make it easier for consumers to recycle its packaging by using materials that best fit the end-of-life treatment facilities available in their countries

By 2020 HUL will increase the recycled material content in its packaging to maximum possible levels. This will act as a catalyst to increase recycling rates.

## Reduce waste from our manufacturing

By 2020 total waste sent for disposal will be at or below 2008 levels despite significantly higher volumes. This represents an 80% reduction per tonne of production and a 70% absolute reduction (versus a 1995 baseline).

All newly built factories will aim to generate less than half the waste of current ones

## Tackle Sachet Waste

HUL's goal is to develop and implement a sustainable business model for handling out sachet waste streams by 2015

## Eliminate PVC

HUL will eliminate PVC from all packaging by 2012 (where technical solutions exists).

## Future Challenges

To achieve its target of increasing recycling and recovery rates, HUL will need to work in partnership with governments, reproducers and NGOs.

It will work towards the long-term goal of 100% sustainable packaging by exploring the potential for emerging technologies and "cradle-to-cradle" approaches.

Ref : Unilever Sustainable Living Plan, Nov-15, 2010

# PACKAGING AND SUSTAINABILITY

Packaging has a key role to play in helping society live more sustainably. It is a crucial part of the system for delivering products from their point of production to their point of consumption. We already have policies on Sustainable Production and Consumption. The link between production and consumption is distribution, and packaging's role in Sustainable Distribution is vital.

For packaging, Sustainable Distribution means: -

Optimizing the use of material, water and energy

Minimizing waste from both product and used packaging

Maximizing recovery of value from waste as material, energy or compost

To achieve this, packaging has to be designed taking into account its entire lifecycle and the characteristics of the product, the supply chain and the needs of consumers.

Looking at packaging in isolation ignores the 'big picture' requirements of sustainability. We need to look beyond narrow considerations such as packaging waste and recycling to consider all of the aspects including product wastage, water consumption, energy use and transport impacts.

Typically ten times the energy and resources go into producing the food and goods compared to their packaging. That comparatively small investment in packaging does an important job. It prevents food from going to waste and household goods being scrapped, and it is becoming even more important in modern society. Today more than 50% of the world's people live in towns and cities and are increasingly reliant on sophisticated supply chains to feed and clothe themselves and run their homes.

## THE PACKAGING AND PRODUCT SUSTAINABILITY CHAIN

No one buys packaging for its own sake people buy food, drink and a host of other products to satisfy their needs and desires.

Packaging makes those purchases and today's lifestyles possible, even for items like fruit and

vegetables bought "loose" which must be packed for protection during shipment to the shops. While the consumer deals directly only with retailers and municipal waste authorities, packaging has a long and complex lifecycle, most of which, like an iceberg, remains hidden from view.

Each stage of the packaging and product lifecycle places different expectations and demands on packaging, all of which influence its design and determine its impact on sustainability.

INCPEN (Industry Council For Packaging And The Environment) has a vision of the future where all production, distribution and consumption contribute to a truly sustainable society. It defines a sustainable packaging and product supply chain as a system that enables goods to be produced, distributed, used and recovered with minimum environmental impact at lowest social and economic cost.

INCPEN's members aim to help consumers live sustainable lifestyles.

Ref. : [www.Incpen.org](http://www.Incpen.org)

## PACKAGING WASTE REDUCTION CHECKLIST

Can the packaging be eliminated ?

Can the packaging be reduced by product modification, decreased weight/size/volume, elimination of secondary packaging, or standardization ?

Can the packaging be composed of a single material ? If not, can the different materials be easily separated ?

Are the toxic materials in the packaging ? If so, can these toxic materials be eliminated or replaced with non-toxic substitutes ?

Can the package be returned from consumers and redistributed ?

Can the package be refilled from bulk or larger containers ?

Is the package recyclable in most communities ? Does the package contain the Does the package contain inks, dyes, or tints that could be removed to enhance recyclability

## PACKAGING AND WASTE REDUCTION

Paper and paperboard, the most widely used packaging materials, represent about 40 percent of all packaging used in the country. Next are glass, wood, plastics, and metals, which comprise 19, 16, 14, and 7 percent, respectively, of the packaging used. Most of these materials can be recycled, but

recycling is only a partial solution. Research has shown that the major environmental impact of packaging is not in disposal but in the production of the packaging itself. In the long run, packaging systems that use less material and recycle their components will likely provide the greatest environmental and economic benefits.

### Consumers Prefer Less Packaging

Compelling reasons to use less packaging come from consumers. According to a survey by Packaging Digest, more than a third of consumers would like to see simpler packaging of less material, and 19 percent want packaging made from recycled materials. The survey also indicated that "to reduce packaging waste, 7 out of 10 households buy packages that recycle easily, half buy concentrated products in smaller packages, and 3 out of 10 buy products in larger sizes. Twenty percent say they are willing to buy



unpackaged products from bulk bins, and nearly 40 percent will reject products that appear to be overpackaged." Another survey conducted by Packaging magazine stated this last finding even more strongly: about one-third of survey respondents said that regardless of other factors, they would "reject products that appear to be overpackaged."

### Principles of Packaging Reduction

The four principles arranged below in order of priority have helped many companies achieve substantial cost savings and effective waste reduction. If all four principles cannot be applied, companies should start at the top for the greatest impact/waste reduction.

#### Eliminate unnecessary packaging

If product integrity is not jeopardized, eliminate packaging altogether, or consider eliminating one



Source for footprint and breakdown below: Unilever 2008 baseline study across 14 countries. Total in tonnes.

Integrating sustainability into our innovation process has helped our designers develop products and packaging that use materials more efficiently.

Our redesigned Suave shampoo bottle saved the equivalent of more than

**100 MILLION**  
plastic bottles over four years



The upside-down deodorant pack for Rexona, Sure and Dove uses up to

**18% LESS**  
plastic in each pack



or more layers of packaging.

### **Case Study**

Target Stores eliminated about 1.5 million pounds of waste and saved \$4.5 million by eliminating unnecessary layers such as individual polybags, tissue paper, cardboard inserts, pins, collar inserts, tape, and clips in its "soft lines" merchandise. All these are now banned from Target's "soft lines" shipments.

## **2. Reduce packaging materials**

Reduce the number and amount of materials used in packaging through the following methods:

- Modify product design;
- Decrease the weight of the materials used;
- Replace multiple materials with single types;

### **Case Study**

Several years ago, Home Depot substituted lighter weight slipsheets for wooden pallets in its internal shipping operations and requested vendors to use slipsheets also. The company eliminated 36,000 tons of waste annually and saved \$2 million. Its vendors have also benefited from reduced shipping costs as slipsheets cost about one-fifth and weigh 50 pounds less than pallets.

## **3. Reuse packaging components.**

Choose reusable or refillable packaging materials wherever possible.

### **Case Study**

Alpine Windows worked with its glass supplier to design a system of reusable straps and tarps for shipping window glass. Previously, the glass was shipped in wood crates. With the new system which attaches to trucks specially outfitted, Alpine has eliminated 4,500 crates annually and saved \$250,000.

## **4. Use recyclable packaging.**

In packaging design, consider basic issues of recyclability. For example, make packaging components easy to separate for recycling, and do not unnecessarily combine or bind distinct materials. In addition, purchase the highest levels possible of post-consumer, recycled-content packaging materials. This choice helps sustain the markets for these recycled materials and, ultimately, lowers the price of recycled-content products.

### **Case Study**

McDonald's Corporation has directed its nearly 600 suppliers to use corrugated boxes that contain at least 35 percent recycled materials and include high levels of post-consumer content; the restaurant chain's carryout bags contain over 50-percent post-consumer content.

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