What role do flexible packages play in helping our environment?

Flexible packages are produced from lightweight yet durable materials such as paper, plastic film, aluminium foil or any combination of those materials. Because flexible packages generally conform to the shape of the product, excessive layers of packaging are eliminated. Additionally, less material is needed to create the packages, less fuel is needed to transport the packages, and less landfill space is needed to dispose of them. If, for example, you replace a steel soup can with a flexible pouch, the weight of the product is reduced 93 percent, and the amount of packaging is reduced 97 percent.

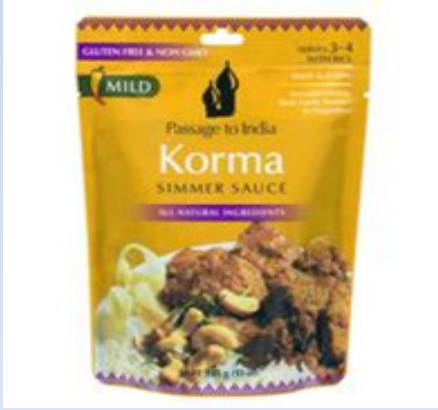
Compare

Glass Jar – 350g product

- Gross weight – 623g
- Packaging weight % - 43.5%
- Breakable
- Minimal print face areas
- Standard tamper evidence

Stand Up pouch – 375g Product

- Gross weight – 388g
- Packaging weight % - 3.4%
- Shatterproof
- Maximum print face areas
- Superior tamper evidence



Flexible v Rigid

- When processors and packagers evaluate the potential of the stand up pouch for their product applications, there are several considerations to weigh. Pouch material is lightweight, and pouches are space-efficient in terms of freight, storage and shelf display. These attributes can translate to significant shipping and storage savings, especially for large-volume operations. Pouches also offer an opportunity for striking, full-faced graphics presentations that can attract shopper attention and make a positive impact on sales.
- Pouches are easily opened and quickly, easily evacuated of product, reducing costly product waste. And once the packages are emptied, they can be flattened for disposal—offering considerable disposal space savings advantages over metal cans, glass jars and rigid plastic containers.
- Finally, the material cost of pouches are generally less expensive than rigid plastic and glass containers.

Beverage Packaging

Beverages have typically been packaged in aluminum cans, glass, or plastic bottles. Stand-up flexible pouches are making inroads in packaged juices and fruit drinks.

- **The flexible beverage pouch consumes 1/2 the amount of energy compared to the closest alternative.**
- **The flexible beverage pouch generates 75% less emissions than the closest alternative.**
- Stand-up flexible pouches significantly reduce greenhouse gases released and energy consumed during the transport of unfilled packaging from packaging converter to filling operation.

Beverage Packaging	Product Weight	Packaging Weight	Product-to-Packaging Ratio	Packaging Weight per 100 g Product	**MSW Landfill per 100 g Product***	**Energy Consumption MJ/8 oz**	**Emissions Kg CO_2 e /8 oz**
Glass Bottle & Metal Cap	8 ounces (236 g)	198.4 g	1:1	83.9 g	**54.5 g**	**3.36**	**0.29**
Plastic PET Bottle & Cap	8 ounces (236 g)	22.7 g	10:1	9.6 g	**6.0 g**	**3.00**	**0.18**
Aluminum Can	8 ounces (236 g)	11.3 g	21:1	4.7 g	**2.4 g**	**0.99**	**0.08**
Stand-up Flexible Pouch	6.75 ounces (199 g)	5.7 g	35:1	2.8 g	**2.8 g**	**0.45**	**0.02**

Cradle-to-grave life cycle energy consumption and CO_2 emissions data developed for the FPA by Battelle Memorial Institute.

Product assumed to be water.

*Recycling rates factored: U.S. EPA 2007 MSW Report.

Packaging weight, product weight, and product-to-packaging ratio calculated by Packaging & Technology Integrated Solutions, LLC (PTIS).

Reference Sources

(1) FPA, "*Flexible Packaging: Less Resources. Less Footprint. More Value.*" Case Study Brochure

(2) *DuPont Packaging Awards for Innovation*

(3) The Dow Chemical Company, Dow Presentation (equation data): American Chemistry Council, US Energy Information Administration

(4) U.S. EPA, "*Municipal Solid Waste in the United States: 2007 Facts and Figures*"

(5) FPA/Battelle Memorial Institute Report on the Sustainability of Flexible Packaging

Flexible Packaging Association

www.flexpack.org

Printed on 30% post consumer recycled content paper.

Flexible Packaging

Uses Less Energy
Generates Less CO_2 Emissions
Contributes Less to Landfill

Examples of beverage packaging (1,4,5)

Package Type	Beverage Weight	Package Weight	Product to Package Ratio	*MSW Landfill per 100 g Product	Energy Consumed MJ/8 oz	Emissions kg CO_2 e /8 oz
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Aluminum Can	8 oz (236 g)	11.3 g	21:1	2.4 g	0.99	0.08
Flexible Standup Pouch	**6.75 oz (199 g)**	**5.7 g**	**35:1**	**2.8 g**	**0.45**	**0.02**

* recycling rates factored

Flexible Packaging

Less Resources. Less Footprint. More Value.

Fast Facts

Third Edition

Less Resources. Less Footprint. More Value.

Flexible Packaging

Manufacturing, distribution, and use

- Consumes less energy and fewer natural resources
- Generates less CO_2 emissions
- Results in higher product to package ratio
- Requires fewer trucks for transportation, using less fuel and creating less emissions
- Provides many consumer conveniences:
  - Extended shelf life
  - Easy storage
  - Microwaveability
  - Recloseability

Flexible Packaging

Creates Less Footprint

Energy consumption and environmental impact during transportation is greatly reduced.

Truckloads needed to transport packaging for equal amounts of product [2]

26 truckloads of unfilled glass jars

1 truckload of unfilled flexible pouches

Flexible Packaging

Uses Less Resources

Examples of packaging needed to package 60 pounds of beverage [1, 3]

50 pounds of glass

6 pounds of Rigid PET

3 pounds of aluminum

1.5 pounds of flexible plastic

SOURCE REDUCTION

- **What is source reduction or "pre-cycling?"**
  Source reduction means using less material in the first place. With regard to packaging, and flexible packaging in particular, source reduction means using less material to hold, or package, a product. This, in turn, reduces the volume of packaging material that must be recycled or discarded after consumption. Therefore, flexible packages are "pre-cycled" because they use "less waste in the first place.®"
- **What's the difference between "pre-cycling" and recycling?**
  Pre-cycling means using less material at the source. Less paper means less tree pulp is needed, less plastic means less natural gas is needed, etc.

  Recycling, on the other hand, means taking an existing package, or material, and turning it into something else. The recycling process involves using fuel to transport the items to recycling facilities, who in turn transport it to end-users. The end-users use energy to recycle the package, use more material to make a new package, and then use more fuel to ship the package to its end destination. With recycling, you may be "closing-the-loop" but you are also using more material and consuming more energy. While recycling is a sound environmental practice, more and more consumers, environmental groups, waste management officials, educators and legislators have come to believe that recycling is only part of a holistic approach to resource conservation.