

You thought you had a good idea.

You'd save money with molded pulp. And save yourself the trouble of consumer pressure brought on by perceptions that are false. Instead, you're left with shattered products and broken dreams of a better earth.

Get it together. Get back to EPS.



What factors need to be considered when making packaging choices?

How do these decisions impact the environment?

Does recyclability always equal sustainability?

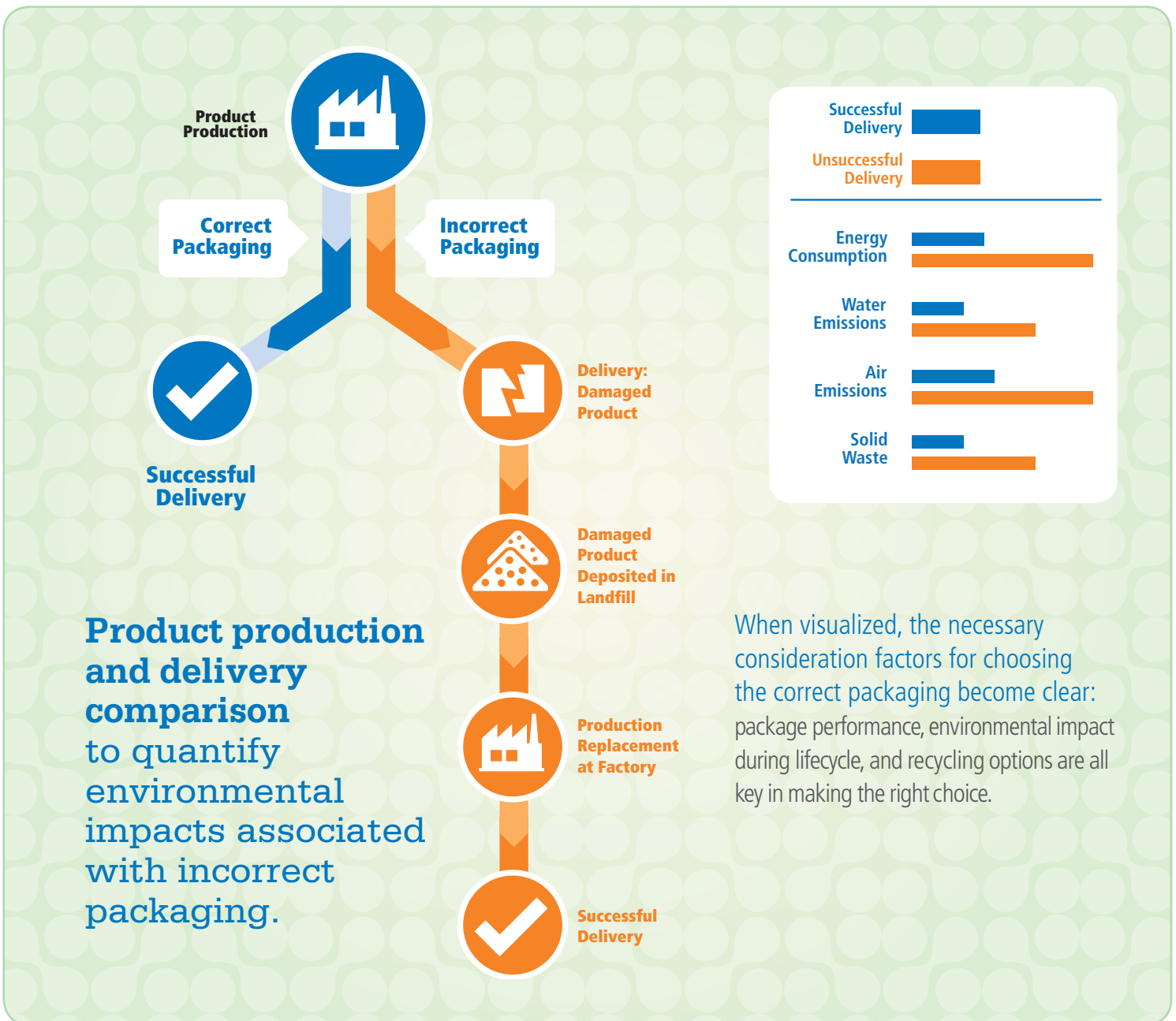
The answers, plus other thought-provoking insight, are all inside.



epspackaging.org

You thought you were saving the environment with alternative packaging. Think again.

What factors go into choosing the correct packaging? If simply relying on drop tests, vibration tests and other performance data, packaging selection is often evident. However with new sustainability requirements now materializing in packaging scorecards and other attempts to assess environmental impacts, the correct choice is not so obvious. Often based on subjective information and interpretation, environmental ‘scoring’ is a complex process. Damage avoidance – the primary function of a packaging system – plays a key role in environmental impact, as illustrated below.



Think again... “Materials with high levels of post-consumer materials are not guaranteed to have lower burdens than competing materials with low levels of post-consumer materials.” – Oregon DEQ Study

One common misperception, both in the industry and in the world, is that if something is recyclable, it's not an environmental burden. Yet that's not always the case. Paper is a perfect example of this. Unlike most other recyclables, it cannot be recycled over and over again. Eventually the fibers become too weak and short to be used again. Most molded pulp is made from recycled material such as newsprint, which has a large percentage of short fiber that has already been recycled several times. *So if you think that molded pulp is 100% recyclable as it is commonly touted to be, think again.*

A limitation in recycling capabilities is not the only drawback of molded pulp. As proven in the Oregon DEQ study, molded pulp manufacturing requires significant amounts of natural gas in the drying process and the effects of pulp and paper mill effluents on the environment are a global concern. Molded pulp often weighs more than foam packaging, which results in increased fuel and transportation impacts. Typically, packaging shipped with molded pulp will require more energy over its lifecycle than the same box shipped with polystyrene loose fill.

Smart Packaging Choices

Any given cushioning material is not always the best choice for every application. Some applications are best suited to molded pulp while others clearly require the unique cushioning abilities of expanded polystyrene. Making the smartest decision for packing a product will result in a smarter choice for the environment.

| Application | EPS Packaging | Molded Pulp Packaging |
|--------------------------------|---------------|-----------------------|
| Auto Parts | ● | ● |
| Cameras | | ● |
| Cold Chain Shippers | ● | |
| Furniture | ● | |
| Ink & Toner Cartridges | ● | ● |
| Laptop & Personal Computers | ● | ● |
| Lighting Fixtures | ● | |
| Telephones & Small Electronics | | ● |
| Televisions | ● | |
| Toys | ● | ● |
| Vacuum Cleaners | ● | ● |
| Wine | ● | |



EPS meets five of the seven criteria for sustainable packaging based on the Sustainable Packaging Coalition definition.

Did you think about the greenhouse gases emitted by the pulp and paper manufacturers?

You should. The U.S. government figures show that pulp and paper manufacturers are the fourth largest industrial emitters of greenhouse gases. Further, the pulp and paper industry releases about 212 million tons of hazardous substances into the air and water, and is ranked as the third largest user of industrial water. The EPA figures indicate that the pulp and paper industry ranks in the top four among U.S. manufacturing industries in the release of dioxin and dioxin-like compounds.

Did you think that all molded pulp is created equal?

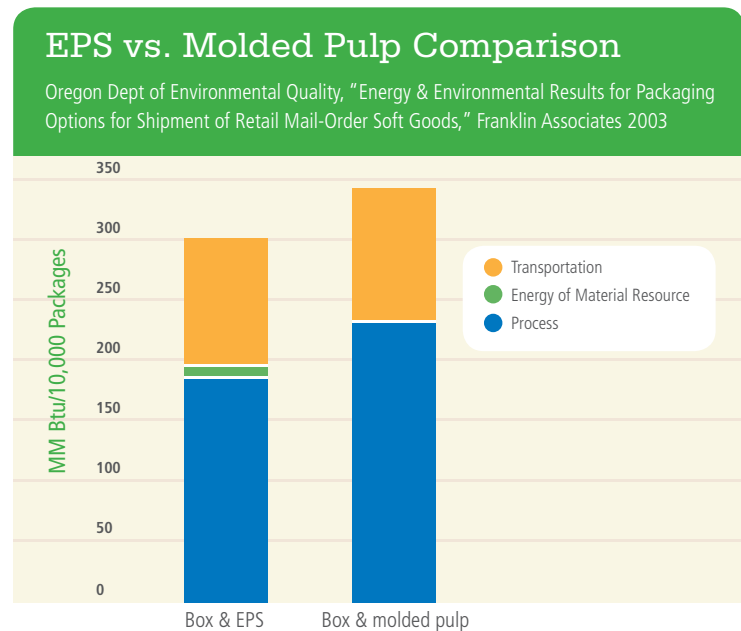
It isn't. The choice of fiber for molded pulp products is important, and the properties of the different fibers used will greatly influence the characteristics of the final product. Identical packaging structures made of different fiber types will produce products with different performance and specifications. Raw material with long fibers will develop greater strength, facilitating high loading ability for heavy-item packages. Long fiber also provides superior product flexibility. Contrastingly, short fiber based raw material produces molded pulp products which are more rigid, but with a lower strength threshold. And, shorter fibers are not recyclable.

Did you think that molded pulp will biodegrade in landfills faster than EPS?

It won't. Contrary to popular belief, nothing—not paper, plastic or even food—readily degrades in a landfill. And it's not supposed to. Degradation creates harmful liquid and gaseous by-products that could contaminate ground water and air, therefore, modern landfills are designed to keep out the air, water and sunlight needed for the degradation process. The total amount of polystyrene waste accounts for less than 1% of the total landfill space by weight and less than 1% by volume. Yet the total waste generation for paper is four times the amount of plastic, and the total paper discarded into landfills is two times higher than plastic.

Did you think that EPS and molded pulp have equal impact on the environment?

They don't. When compared to EPS, molded pulp packaging consumes between 70-115% more energy, results in between 9-31% more air pollution, and emits between 323-348% more greenhouse gas. Cushioning inserts made of EPS have, for the same functional performance, distinctly less of an impact on the environment than those made of paper pulp.



If you thought you had all the answers, think again.

Think again... “Changing packaging to reduce solid waste may have unintended consequences elsewhere such as an increase in energy use, greenhouse gases, or water pollution.” – Oregon DEQ Study

What we do know: the facts and stats about EPS and its environmental impact.

The EPS industry has achieved an average post-consumer recycling rate of 19% and average post industrial recycling rate of 25% for the past fifteen years, one of the highest among all plastics. The majority of post-industrial EPS scrap is reprocessed in house and an average of 50 percent of the post-consumer material collected is used in the manufacture of new EPS transport packaging and loosefill peanuts, which has significantly reduced requirements for raw material resources and energy and has diverted material from landfills.

What we don't know: the recycling rate of molded pulp.

There are no sources that can accurately, if at all, measure the amount of molded pulp being collected for recycling. *Why is molded pulp not being held to the same standards as EPS?*



When compared to EPS, molded pulp consumes between 70–115% more energy, results in 9–31% more air pollution and emits between 323–348% more greenhouse gas. (InFo Kunststoff, 1995)

What's not to think about? It's obvious that EPS demonstrates favorable environmental performance in most aspects, making it the ideal material for product shipments that require superior protection. Beyond its competitive material pricing, EPS – because of its versatility and lightweight characteristics – can offer savings in design and development, product assembly and distribution costs.

In order to truly make an impact on the environment, it's essential to make informed decisions about packaging.

It's never a bad idea to think again.

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