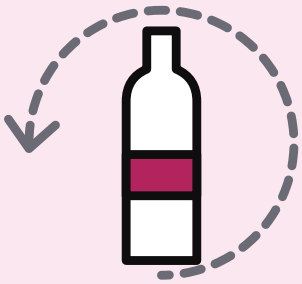
Concept

Design for recycling

Designing a package so that, once used, sorting plants can recognize it and its material can be recycled, by choosing materials, colors and labels well.



In Spanish

Diseño para el reciclaje

Origin

No single author: it is developed by recyclers' association guidelines, such as APR (2018), and promoted by the Ellen MacArthur Foundation (2017)

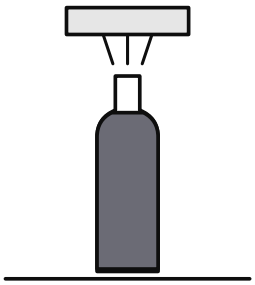
What problem it addresses

A recyclable material is not enough: a color or a label can stop the plant from recognizing the package. Packaging design takes from it concrete decisions made while drawing the package.

An example

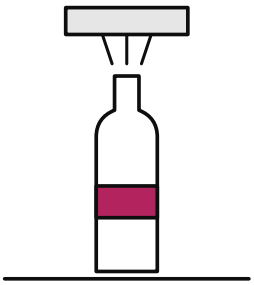
An illustrative example: two clear plastic bottles, identical except for the label.

Full sleeve



A sleeve of another plastic covers the whole bottle. **The plant's reader may not see what it is made of.**

Small label



The label leaves almost the whole bottle visible. **The reader recognizes its material and sorts it correctly.**

The material is the same; what decides whether it is recycled well is a design detail.

Why it happens

1 

At the plant, machines sort packages by reading their material with infrared light.

2 

Some designs can't be read, such as black plastic or a sleeve that covers the package,

3 

and the package ends up missorted, even though its material could have been recycled.

Applications in design

Use it like this

Check with your region's recyclers' guidelines how each material is sorted before finalizing the design.

Avoid

Black plastics and sleeves covering the whole package without first checking that the plant can recognize them.

Don't fall for it

A recycling symbol on a package doesn't mean it gets recycled: that depends on how it is designed and where it is thrown away.

14%

What the research says

Share of the world's plastic packaging collected for recycling after use (Ellen MacArthur Foundation, 2017).

●●● **Solid evidence.** According to the same foundation, half could be profitably recycled if design and collection improve, but 30% needs a fundamental redesign (Opsomer, 2017).

Connections

Used in

- Circular design
- Color, material and finish (CMF) design
- Ecodesign

Authors and works

2018	**Association of Plastic Recyclers**	Explained how near-infrared machines sort packages and which designs keep them from recognizing them, such as black plastic or sleeves covering the bottle.
2017	**Ellen MacArthur Foundation**	Estimated what share of plastic packaging could be reused, what share recycled with better design, and what share needs a fundamental redesign.

Sources

Original sources

- Association of Plastic Recyclers (2018). Near Infrared (NIR) sorting in the plastics recycling process. Association of Plastic Recyclers. View source (https://plasticsrecycling.org/staging/images/Design-Guidance-Tests/APR-RES-SORT-2-NIR-sorting-resource.pdf)
- Ellen MacArthur Foundation (2017). The New Plastics Economy: Rethinking the future of plastics & catalysing action. Ellen MacArthur Foundation. View source (https://ellenmacarthurfoundation.org/the-new-plastics-economy-rethinking-the-future-of-plastics-and-catalysing)

Secondary sources

- Opsomer, R. (2017, January 20). 40 industry leaders get behind the three strategies that will re-make the global plastics economy. World Economic Forum. View source (https://www.weforum.org/stories/2017/01/40-industry-leaders-get-behind-the-three-strategies-that-will-re-make-the-global-plastics-economy/)

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