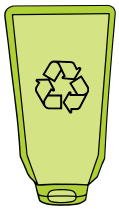
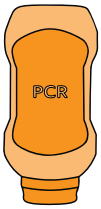
STREAMLINED LIFE CYCLE ASSESSMENT* CONDIMENTS/SAUCES CASE STUDY

CONDIMENTS/SAUCES PACKAGE COMPARISON

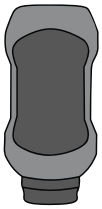
Condiments and sauces are most often sold in a rigid package. All five of the packages used to create the generic Condiment/Sauce pack standard were between 12 – 16 oz. For this streamlined LCA study, two rigid packaging formats were evaluated (0% and 30% PCR in the PET bottle) vs. the Recycle-ready premade STANDCAP Pouch. A product weight of 14.9 oz. was used for the comparison.



RECYCLE-READY STANDCAP



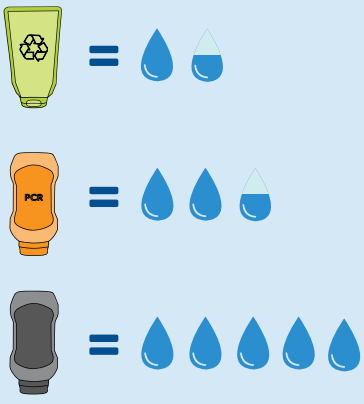
PET BOTTLE WITH PCR



PET BOTTLE

Water Consumption

The Recycle-ready premade STANDCAP Pouch results in much lower water use **(-69.73%)** than the rigid PET bottle largely due to the laminating and extrusion process for film layers not requiring nearly the amount of water as need for cooling molds in the manufacturing process for rigid containers.



Greenhouse Gas Emissions

The Recycle-ready premade STANDCAP Pouch again shows a substantial reduction in emissions **(-51.77%)** vs. the rigid PET container due to its lighter weight material. Both the Recycle-ready premade STANDCAP Pouch and PET bottle had closures made from injection molding with the Recycle-ready premade STANDCAP Pouch fitment coming in heavier, but the pouch is significantly lighter than the rigid bottle (8.8g vs. 29.6g).

Fossil Fuel Consumption

The Recycle-ready premade STANDCAP Pouch uses over **41.74% less** fossil fuel as the rigid PET condiment/sauce container. While both packages use plastic for the majority of their construction, the Recycle-ready premade STANDCAP Pouch is much lighter (22.32.g vs. 39.32g) than the PET bottle, driving the lower fossil fuel use.

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*All environmental impact metrics were developed using the streamlined life cycle assessment tool, EcoImpact-COMPASS®

END OF USE SUMMARY

SOURCE REDUCTION BENEFITS

According to the U.S. EPA Waste Hierarchy, the most preferred method for waste management is source reduction and reuse.

A major benefit of flexible packaging is the high product-to-package ratio that it offers.

RECOVERY BENEFITS

RECYCLE-READY STANDCAP

1x
amount of material ending up as municipal solid waste

PET BOTTLE WITH PCR

3x
amount of material ending up as municipal solid waste

PET BOTTLE

3x
amount of material ending up as municipal solid waste

High product-to-package ratio:

95.6% Product weight | **4.4%** Package weight

Low product-to-package ratio:

91.5% Product weight | **8.5%** Package weight

91.5% Product weight | **8.5%** Package weight

The rigid PET bottle results in over 30% more material being discarded at the end of life (72,215g vs. 50,130g of packaging for 1000 kg of product), even when taking into consideration estimated recycling rates for PET bottles (29%), vs the Recycle-ready premade STANDCAP Pouch (13% recycling rate) (52,381g vs. 99,515g).

Even if the Recycle-ready premade STANDCAP Pouch recycling rate was at 0%, it would still result in about 27% less material discarded than the rigid PET container.

IMPLICATIONS

The results show that the Recycle-ready premade STANDCAP Pouch has lower environmental impacts including fossil fuel usage, GHG emissions, and water usage in this scenario than the inverted PET container. The table below summarizes a variety of environmental attributes for the Recycle-ready premade STANDCAP Pouch when compared to a generic rigid PET container – even with 30% PCR. In all of the attributes evaluated below, the Recycle-ready premade STANDCAP Pouch holds an advantage vs. the rigid package.

FORMAT	FOSSIL FUEL CONSUMPTION (MJ-EQUIV)	GHG EMISSIONS (KG-CO^2 EQUIV)	WATER CONSUMPTION (L)	PRODUCT-TO-PACKAGE RATIO (%)	PKG LANDFILLED (G)/1,000 KG SYRUP)
RECYCLE-READY STANDCAP	2.08 (-41.74%)	0.0883 (-51.77%)	32.23 (-69.73%)	21.6:1 95.6% : 4.4%	50,130 (-30.6%)
PCR BOTTLE	2.96 (-17.09%)	0.1574 (-13.99%)	56.32 (-47.11%)	10.7:1 91.5% : 8.5%	72,215
PET BOTTLE	3.57	0.183	106.49	10.7:1 91.5% : 8.5%	72,215

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*For more information and methodologies of assessments, please visit **www.flexpack.org** or **www.glenroy.com** to download Glenroy's "A Streamlined Life Cycle Assessment Comparison for the Glenroy Recycle-ready Premade STANDCAP Pouch vs. Rigid Package for Condiments / Sauces" report and refer to pages 6-10.*