

STREAMLINED LIFE CYCLE ASSESSMENT* MAYONNAISE PACKAGING CASE STUDY

MAYONNAISE PACKAGE COMPARISON

Mayonnaise is a popular condiment sold in a variety of packaging formats. Three packaging formats for the sandwich spread were evaluated with a cradle-to-grave boundary for this Life Cycle Assessment study: an inverted PET bottle, a PET jar and the premade STANDCAP Pouch, an award-winning inverted flexible pouch.



STANDCAP FLEXIBLE POUCH



INVERTED PET BOTTLE



PET JAR



WATER CONSUMPTION

Due to the minimal amount of water needed for its laminating and extrusion process, the premade STANDCAP Pouch uses less water **(-76.8%)** than the rigid PET bottle does for its cooling molds.

The premade STANDCAP Pouch results in nearly **70%** lower water use than the PET jar, particularly in the jar's manufacturing phase when water is needed to cool molds.



GREENHOUSE GAS EMISSIONS

Due to its lighter weight and less energy-intensive manufacturing process, the premade STANDCAP Pouch shows a large reduction in GHG emissions **(-62.7%)** compared to the stretch blow molding and heating used to create a rigid container.

The premade STANDCAP Pouch produces GHG emissions nearly half **(-47.7%)** that of the rigid PET jar, which is a product of the weight difference between the two package formats. Differences in manufacturing and converting also factor in.



FOSSIL FUEL CONSUMPTION

Because of its lighter weight, the premade STANDCAP Pouch uses less than half the fossil fuel **(-58%)** as the rigid PET mayonnaise container.

The premade STANDCAP Pouch results in less than a third of the fossil fuel **(-38.4%)** than the PET jar. This is because the PET jar uses close to twice as much material to package nearly the same amount of product.



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.

High product-to-package ratio:



Low product-to-package ratio:



RECOVERY BENEFITS

STANDCAP FLEXIBLE POUCH



1x

amount of material ending up as municipal solid waste

While many multi-material flexible packages are not yet recovered and recycled in any significant amount, they still result in a substantial reduction in the amount of material sent to landfill versus other types of packaging.

PET JAR



1.3x

amount of material ending up as municipal solid waste

The recycling rate of the PET jar would need to increase by nearly double — **29.2%** to about **57%** — to match the premade STANDCAP Pouch's lower amount of material discarded.

INVERTED PET BOTTLE



2x

amount of material ending up as municipal solid waste

The inverted PET container results in nearly **2x** as much landfilled waste versus the premade STANDCAP Pouch.

IMPLICATIONS

The premade STANDCAP Pouch has a number of sustainability benefits when compared to a rigid inverted container or PET jar for mayonnaise. These include lower fossil fuel and water use, GHG emissions, better efficiency of materials and considerably less material discarded at end-of-life.

FORMAT	STANDCAP FLEXIBLE POUCH 	INVERTED PET BOTTLE 
 FOSSIL FUEL CONSUMPTION (MJ-EQUIV)	428 (-58%)	1,018
 GHG EMISSIONS (KG-CO ² EQUIV)	20.07 (-62.7%)	53.78
 WATER CONSUMPTION (L)	6,172 (-76.8%)	26,250
 PRODUCT-TO-PACKAGE RATIO (%)	19:8:1 (95.2%:4.8%)	8:3:1
 PKG LANDFILLED ((G)/1,000 KG MAYO)	50,569 (-48.2%)	97,624

*A normalized product weight (common value divisible by all package formats) of 3,220 fl. oz was used for Fossil Fuel, GHG and Water Consumption calculations.

FORMAT	STANDCAP FLEXIBLE POUCH 	PET JAR 
 FOSSIL FUEL CONSUMPTION (MJ-EQUIV)	27.9 (-38.4%)	45.31
 GHG EMISSIONS (KG-CO ² EQUIV)	1.31 (-47.7%)	2.51
 WATER CONSUMPTION (L)	403 (-69.2%)	1,306
 PRODUCT-TO-PACKAGE RATIO (%)	19.8:1 (95.2%:4.8%)	11.6:1
 PKG LANDFILLED ((G)/1,000 KG MAYO)	50,569 (-25.7%)	68,035

*A normalized product weight (common value divisible by all package formats) of 210 fl. oz. of product was used for Fossil Fuel, GHG and Water Consumption calculations.



For more information and methodologies of assessments, please visit www.flexpack.org or www.glenroy.com to download Glenroy's "A Life Cycle Assessment Comparison for the Glenroy Premade STANDCAP Pouch in the Sauces and Personal Care Market versus Rigid Packaging Options" report and refer to pages 6-13.