

STREAMLINED LIFE CYCLE ASSESSMENT* HUMMUS PACKAGING CASE STUDY

HUMMUS PACKAGE COMPARISON

Hummus is a popular dip often packaged in a PET plastic tub. This Life Cycle Assessment study with a cradle-to-grave boundary evaluated a popular hummus brand in two separate sizes of PET plastic tubs as well as the premade STANDCAP Pouch, an award-winning inverted flexible pouch.



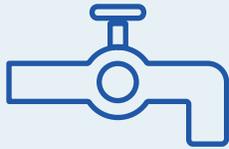
STANDCAP FLEXIBLE POUCH



SMALL PET PLASTIC TUB



LARGE PET PLASTIC TUB



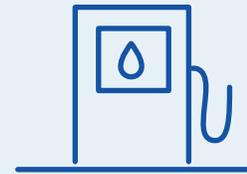
WATER CONSUMPTION

The premade STANDCAP Pouch uses the least amount of water by a wide margin, specifically **62.4%** less than the 10 oz. rigid tub. This is driven by the lighter weight as well as less water needed for the laminating and extrusion process than thermoforming for the rigid tubs. Additionally, the 17 oz. rigid tub used **32.6%** less water than the 10 oz. tub.



GREENHOUSE GAS EMISSIONS

The premade STANDCAP Pouch results in GHG emissions nearly half (**-46.5%**) that of the 10 oz. rigid tub. This is driven by the light weight of the multilayer pouch as well as the extruding and laminating process, which can have lower emissions than the thermoforming of the tub. The 17 oz. tub results in nearly a third (**-32.3%**) lower emissions compared to the 10 oz. tub, again showing the efficiency benefit of the larger pack.



FOSSIL FUEL CONSUMPTION

Fossil fuel use shows that both the premade STANDCAP Pouch and the 17 oz. version of the hummus tub are very similar and result in about **1/3** less fossil fuel than the 10 oz. tub when normalized for comparison to the other packages. Larger packs in general are more efficient than smaller packs.



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

SMALL PET PLASTIC TUB



1.6x

amount of material ending up as municipal solid waste

LARGE PET PLASTIC TUB



1.1x

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.

The 10 oz. tub results in the most packaging landfilled (**84,913 grams per 1000 kg of hummus**) compared to the 17 oz. tub (**-32.4%**) and STANDCAP packaging (**-36.8%**).

IMPLICATIONS

The results of this scenario show that the premade STANDCAP Pouch results in lower impacts across a wide range of environmental metrics including water use, GHG emissions and material discarded. Fossil fuel use was similar to the 17 oz. hummus tub and lower than the 10 oz. tub. The scenario also shows that larger packs are more preferable from an environmental impact perspective as they generally allow a more efficient use of packaging.

FORMAT	FOSSIL FUEL CONSUMPTION (MJ-EQUIV)	GHG EMISSIONS (KG-CO ₂ EQUIV)	WATER CONSUMPTION (L)	PRODUCT-TO-PACKAGE RATIO (%)	PKG LANDFILLED ((G)/1000 KG HUMMUS)
STAND-UP FLEXIBLE POUCH 	158 (-33.4%)	7.42 (-46.5%)	2,281 (-62.4%)	18.6:1 (94.9%:5.1%)	53,661 (-36.8%)
SMALL PET PLASTIC TUB 	237	13.87	6,069	10.5:1	84,913
LARGE PET PLASTIC TUB 	160 (-32.7%)	9.39 (-32.3%)	4,091 (-32.6%)	15.4:1	57,420 (-32.4%)