Reforming rigid containers by Polypropylene containers for water-based paints in Brazil can lead to a 18% reduction in GHG emissions amounting to 0.6 kgCO₂eq per container, over the whole lifecycle of the paint containers.

If one million liters of paint were packaged in such polypropylene containers instead of tinplate containers, this would avoid GHG emissions equivalent to those of a passenger car giving 5.5 laps around the Earth and the equivalent of 1.26 Olympic pools of acid rain.

Brazil is one of the five largest markets for paints. In 2014, 1.397 billion liters of paint were produced, and this market is essentially dominated by tinplate (TP) pails.

With the objective of proposing a solution to the paint pail market to reduce environmental impact, Braskem developed an alternative packaging that is lighter and more resistant to corrosion, based on polypropylene (PP).

Life cycle GHG emissions for a typical 18 litre tinplate container amount to 3.33 kgCO₂eq/container whereas PP containers have a total emission of 2.73 kgCO₂eq/container. The majority of impact in the life cycle of these containers are concentrated in the production process of the materials (tinplate and polypropylene).

The main trade-offs of the polythelene container in the life cycle are in the impact categories of Land Use and Water Use.

Full study available at: www.icca-chem.org/energy-climate

Considering the Brazilian 2014 market (1,397 billion litres of paint) for the studied 18L containers, the graph highlights the emissions in CO₂eq for both solutions and the emissions avoided by the substitution of tinplate by plastic containers (46.5 millions of kg CO₂eq).