QBIG
PACKAGING

COMPANY USE CASE

Efficient hands-free filling of a 1.000L T-liner at a chocolate factory.

CONTEXT & COMPANY SITUATION

A producer of vegetable oils and fats for the food industry was looking for a more efficient and hygienic method to fill liquid chocolate (specific gravity 1,2 KG) into collapsible Intermediate Bulk Containers (IBC's). The existing rigid IBC's were due for replacement, and the company sought a more sustainable solution. Additionally, the current rigid IBC caused:

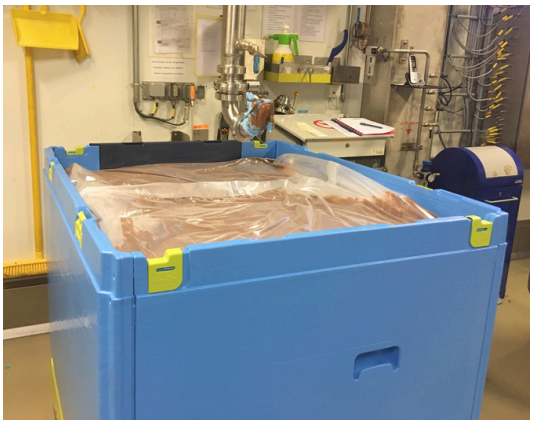
Higher storage costs
Empty rigid IBC's take up just as much space as full ones, as they are not collapsible. This results in high storage volume and increased return-logistics costs.

Transport inefficiency
Because empty containers cannot be compacted for transport, transportation costs often increase. Transport between manufacturers, cleaning facilities, and end users happens frequently.

Cleaning & hygiene
After use, the containers must be thoroughly cleaned, especially in the food industry. This requires time, water, cleaning agents, and often specialized facilities on-site. Alternatively, contaminated containers must be transported elsewhere for cleaning, which is less sustainable. Insufficient cleaning can lead to cross-contamination.

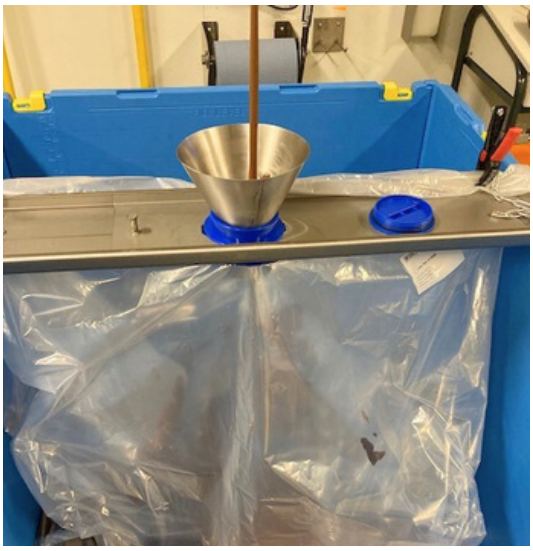
OBJECTIVE

To confirm that the 1.000L T-liner with patented folding method can be filled hands-free in the center of the container and is compatible with existing collapsible plastic containers. Additionally, to confirm that filling at 38°C allows the product to be conditioned in a cooling chamber without issues.



RESULTS

- Hands-free filling successful: The liner remained stable without additional support during the filling process.
- No foam formation: Foam and air bubbles were reduced because the chocolate slid down along the film.
- Consistent filling time: Equal to or even faster than before due to the larger opening of the fill cap.
- Operator feedback: The T-Liner is easier to place and safer to use.
- Photos of the chocolate filling show a stable process and hygienic finish.



APPROACH / TEST SETUP

- **Product:** liquid chocolate
- **Temperature:** 38°C
- **Container:** collapsible plastic foldable container.
- **Liner:** 1.000L T-liner with patented hands-free folding method.
- **Placement:** The liner is placed by positioning the square base on the bottom. A filling bridge supports the upright section. From the side, the liner has the shape of an upside-down “T” (hence the name T-Liner).
- **Filling:** Centrally from the top, directly in the middle of the IBC so that factory infrastructure does not need to be modified.
- **Documentation:** Photos were taken during the fill test.

CONCLUSION

The T-liner met all expectations: hands-free filling increases efficiency and safety, while the air-free construction improves product quality by reducing foam formation. This can be improved even further by connecting the fill hose directly to the fill cap to create a fully sealed system, although this was not necessary for this specific recipe. The central fill position ensures a more stable process inside the IBC.

This T-liner offers clear added value for food manufacturers that package liquids in bulk. It is suitable for filling with a lance, via a funnel, or by connecting directly to the fill cap to prevent air contact inside and outside the liner.

LEARNINGS

- Ensure operators are well instructed on how to place the liner (correct positioning of the square bottom surface).
- Recommended for all applications where hygiene, speed (fast filling) and product quality are critical factors.
- To completely prevent foam formation, connect the fill hose to the fill cap to create a closed system in which no air can enter, as air causes foaming.

CUSTOMER FEEDBACK

The chocolate manufacturer indicated that the 1.000L T-liner significantly simplifies and improves the reliability of the filling process. More time is left for preparing subsequent fillings. Operators especially appreciated that no manual support is needed anymore.