

**TECH OFFER**

**Sustainable Eco-Designed Flexible Packaging**



**KEY INFORMATION**

TECHNOLOGY CATEGORY:

Sustainability - Circular Economy

Foods - Packaging & Storage

Materials - Plastics & Elastomers

Chemicals - Polymers

TECHNOLOGY READINESS LEVEL (TRL): **TRL8**

COUNTRY: **FRANCE**

ID NUMBER: **TO174898**

**OVERVIEW**

This new packaging is a flexible packaging that is an all-encompassing option for several applications including cosmetics, food, consumer, and industrial products. Typically constructed with multi-layer materials to provide the necessary properties for structural integrity and protection of the packaged contents, these packaging products are not recyclable due to the variety of materials used. This technology offers a unique packaging solution that gathers all the advantages of existing packaging options (stand-up pouches, doypacks, bottles and tubes) while overcoming their limitations.

Based on the concept of a pastry bag, the technology is a conical flexible pouch which is eco-friendly and 100% recyclable. Made of a mono-material, this eco-designed packaging utilises lesser materials (up to 70%), is ultra-compressible and suitable for all types of products from liquids to solids, making it adaptable to every sector's needs. With an optimal restitution rate (no loss of contents), it can reduce wastage of the packaged contents and has been certified to reduce 70% of greenhouse gas emissions as

compared to a conventional plastic bottle.

The technology owner is interested to work with Singapore companies on R&D projects for sustainable packaging and out licensing opportunities to manufacture this patented eco-designed packaging product.

## TECHNOLOGY FEATURES & SPECIFICATIONS

This technology is a sustainable and innovative packaging product. Here are some key features of the packaging:

- Made from monomaterial (PE or PP)
- Designed to require less material than another packaging of equivalent volume (saves up to 70% less material)
- 100% recyclable, and can be compressed to take up very little space at the end of its life
- A paper version compatible with the paper recycling stream is under development
- Very high restitution rate, so there is very little product loss.
- Emits 2 to 5 times less greenhouse gas emissions than traditional packaging
- Suitable to package solids, pastes and liquid content
- Fully customisable
- Patented production process that was developed specifically for this packaging

This innovative packaging technology allows businesses to reduce their environmental impact while still providing consumers with high-quality products.

## POTENTIAL APPLICATIONS

The eco-designed packaging solution can be customised (size, spout, materials, printing etc) according to the intended applications including (but not limited to):

- Food
- Cosmetics
- Industrial products
- Pharmaceutical
- Home care
- Personal care

## MARKET TRENDS & OPPORTUNITIES

The plastic packaging market is a rapidly growing market, with a value of US\$389.5 billion in 2021 and expected to reach US\$559.1 billion by 2028. The 5.3% CAGR is being driven by several factors, including the increasing demand for convenience, the growth of e-commerce, and the rising awareness of environmental issues.

This packaging is a real technological innovation in the packaging industry. It is the first packaging to combine three key factors: a recyclable material, a unique process, and a new product design. This makes it a truly unique and sustainable solution that can help to reduce plastic pollution.

## UNIQUE VALUE PROPOSITION

- Fully sustainable packaging solution that comprises of a recyclable material, a unique process, and a new product design
- Contributes to the circular economy: the packaging is recyclable in current recycling streams (PP or PE) at its end of life. A paper version of the packaging is under development, and will be compatible with the paper recycling stream
- Proprietary process to produce the packaging reduces the amount of energy used
- Able to combine all the advantages of existing packaging products available whilst tackling inherent limitation

The technology owner is interested to work with Singapore companies on R&D projects for sustainable packaging and out licensing opportunities to manufacture this patented eco-designed packaging product.