



## **Report on recycling methodology for absorbent hygienic products, possible adaptation and upgrade of the technology**

CIRC-PACK - Towards circular economy in the plastic packaging value chain

Grant agreement: 730423  
From March 2017 to February 2020


Prepared by: Fater S.p.A.

Date: 11/11/2019



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 730423.

**Disclaimer:** The sole responsibility for any error or omissions lies with the editor. The content does not necessarily reflect the opinion of the European Commission. The European Commission is also not responsible for any use that may be made of the information contained herein.

	Document:	Report on recycling methodology for absorbent hygienic products, possible adaptation and upgrade of the technology		
	Author:	Fater SpA	Version:	0
	Reference:	D5.3	Date:	11/11/19

## PUBLISHEABLE SUMMARY

Fater SpA, as leader in the market of Absorbent Hygiene Product (baby diaper, pads and panty liners and light incontinence products) has been studying, during the last 10 years, a technology able to recycle used diapers to produce secondary saw materials to feed the market of circular economy.

As partner of CIRC PACK project it has played an active role in the WP5 “*Demo Case C. Creation of an effective after-use plastic economy by means of multisectoral cascaded approaching, adapting sorting technologies and in-line monitoring system*” developing, testing and validating better system-wide economic and environmental outcomes by creating an effective after-use plastics economy.

FATER has implemented, scaled-up and optimized its existing AHP waste recycling technology, focusing in particular on the separation of a third fraction – the super absorbent polymer (SAP) - beyond cellulosic and plastic fractions, in order to improve the quality of the recycled cellulose and plastics.

The AHP waste recycling plant has a processing capacity of 10,000 tons/year of AHP waste and is able to recover 100% of the three main components of an absorbent hygiene product. From 1 tonne of AHP, can be recovered:

- 150 kg of Cellulose,
- 75 kg of Plastic
- and 75 kg of Super Absorbent Polymer.

Following the activities foreseen in the WP5, Fater has provided two recycled fractions: high-value cellulosic and plastics fractions to be used as Secondary Raw Materials for the following two new applications:

- an innovative plastic box to be used by FATER itself to commercialise as secondary packaging for Pampers' baby diapers;
- mini-pallets used by FATER itself as displays of its products into supermarkets and specialized stores after the end of the CIRC-PACK project.

The objective of this task has been to demonstrate the environmental, economic and technical feasibility of the closed loop applications made of AHP recycled plastics in accordance with Fater success criteria.

The new applications made of AHP recycled plastics had to comply with the following success criteria in order to be validated:

- Technical criteria: demonstrate the same technical performances of the current ones (these criteria were verified, as described below);
- Economic criteria: guarantee at least the same cost;
- Environmental criteria: guarantee a reduction of raw material amount and increase the quantity of the recycled one used for the production.