



PolyUrethane Recycling Towards
a Smart Circular Economy

Deliverable

D4.6 Pilot-scale optimised CAPU flexible foam

WP4 – Smart Design

Project Information

Grant Agreement n°	814543
Dates	1st January 2019 – 31st December 2022

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This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 814543.

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Publishable Summary

In PReSmart WP4, we aim at designing new foam formulations that would be intrinsically mechanically recyclable into a new foam thanks to the introduction of dynamic chemical crosslinks. The challenge is very high, and a lot of work was performed in that direction, allowing to obtain remarkable results. For example, recyclable foams could be made on lab scale (those CAPU foams were recycled up to 7 times following foam-to elastomer and elastomer-to-elastomer cycles). Unfortunately, the best CAPU foam formulations in terms of reprocessing are not the best in terms of physical properties and vice versa. There remain a major technical challenge consisting in obtaining CAPU foams that combine the both desired aspects (good physical properties of the foams and good reprocessing/recycling ability).

Because of this remaining challenge, the decision was taken to postpone the up-scaling of the CAPU foam production until the CAPU foam formulations are fully optimized. Unfortunately, this could eventually not happen within the time-frame of that project.