

# **D3.1 Adhesive and foams obtained from secondary polyols**

## Executive summary

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Number and name of deliverable: **D3.1 Adhesives and foams obtained from 2nd polyols**



The deliverable D3.1. “Adhesives and foams obtained from 2<sup>nd</sup> polyols (solvolysis process)” aims the feasibility of demonstrating the technical feasibility of solvolysis route to obtain adhesives and foams using secondary polyols obtained from PUR foam coming from bulky waste.

## 1. Post-consumer foam separation

The collected post-consumer foam waste was analysed via NIR spectroscopy techniques to separate foam in terms of the chemical composition of the polyol and isocyanate educts.

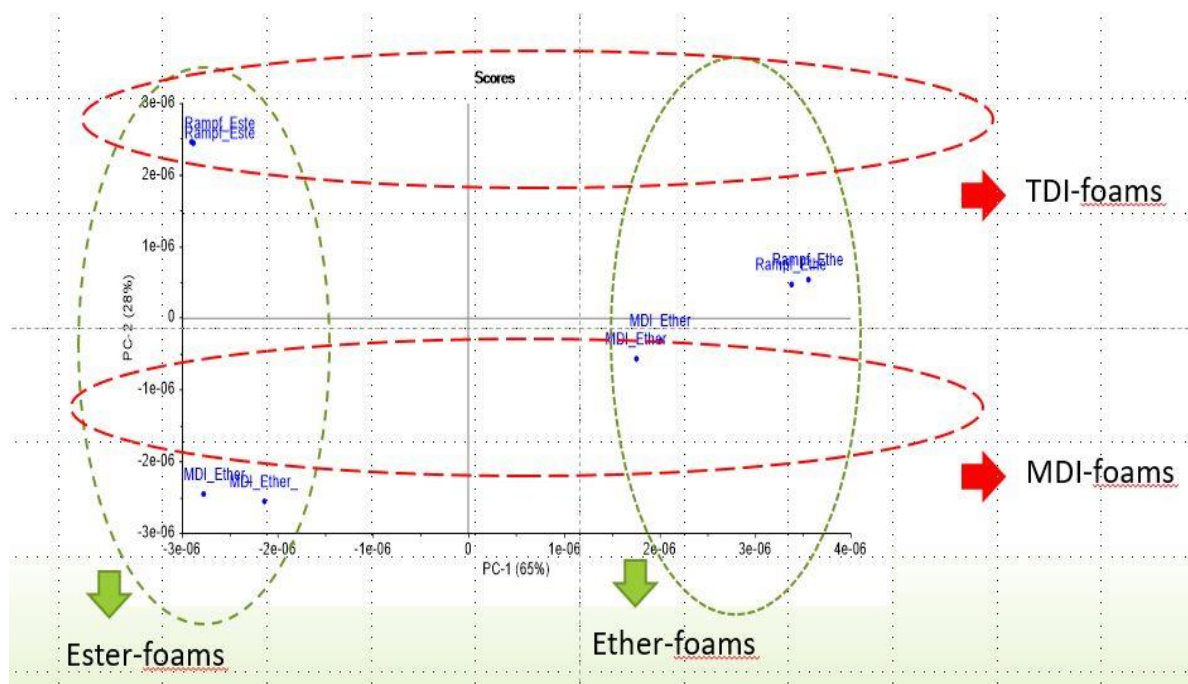


Figure 1 PC analysis of investigated post-consumer foam materials.

As seen in Figure 1 the different foam materials could be separated via NIR spectroscopy and PC analysis. The separation before the chemical recycling process leads to higher secondary polyol quality.

## 2. Manufacturing of secondary polyols

Rampf used two different solvolysis process, acidolysis and glycolysis:

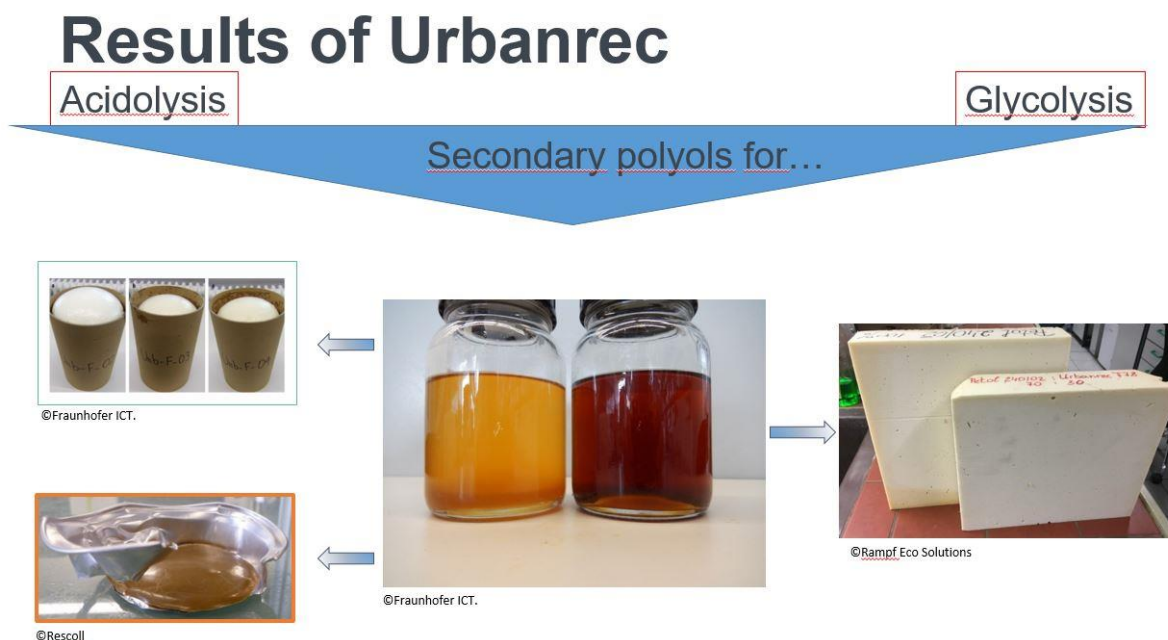


Figure 2: Valorisation routes of secondary polyols coming from post-consumer polyurethane foam.

The obtained polyols from acidolysis was incorporated in viscoelastic mattresses top layer foam and used for PUR hot-melt adhesive

The secondary polyol from glycolysis process is used for insulation panel applications.

The obtained polyol from post-consumer mattresses waste could be used successfully in flexible and rigid foam application and also for hot-melt adhesive.