

ARC Abstract - Alfa Laval

14-15 November 2022, Cologne (Germany)



Chemical recycling of plastic waste and used tires is experiencing a market growth thanks to the commitment of the chemical industry in recycling activities. Many of these chemical recycling technologies such as pyrolysis, hydrothermal liquefaction or solvolysis require difficult separation tasks which can be achieved using Alfa Laval's mechanical separation equipment.

In many pyrolysis processes, the oil produced after condensation and gravity separation requires an additional purification step due to the presence of very fine solid particles and/or water in the form of micro-bubbles. This separation is an excellent fit with our CH range portfolio which consists of highly efficient disc stack centrifugal separators available in many different configurations and sizes to accommodate different process needs. Their high metallurgy is suitable against chlorides in water which are often seen due to the presence of PVC or chloroprene in the feedstock. The separators are also available for hazardous areas which is a common requirement in this application.

Our separation equipment can also be used in other parts of the process. Decanters can be used to increase the dryness of carbon black produced in the pyrolysis reactor. Oily wastewater can be treated using our PureBilge™ disc stack separation modules. Finally, in processes where organic chlorides are removed using adsorbents in the form of fine particles, our disc stack separators can also separate the spent adsorbent from the oil.

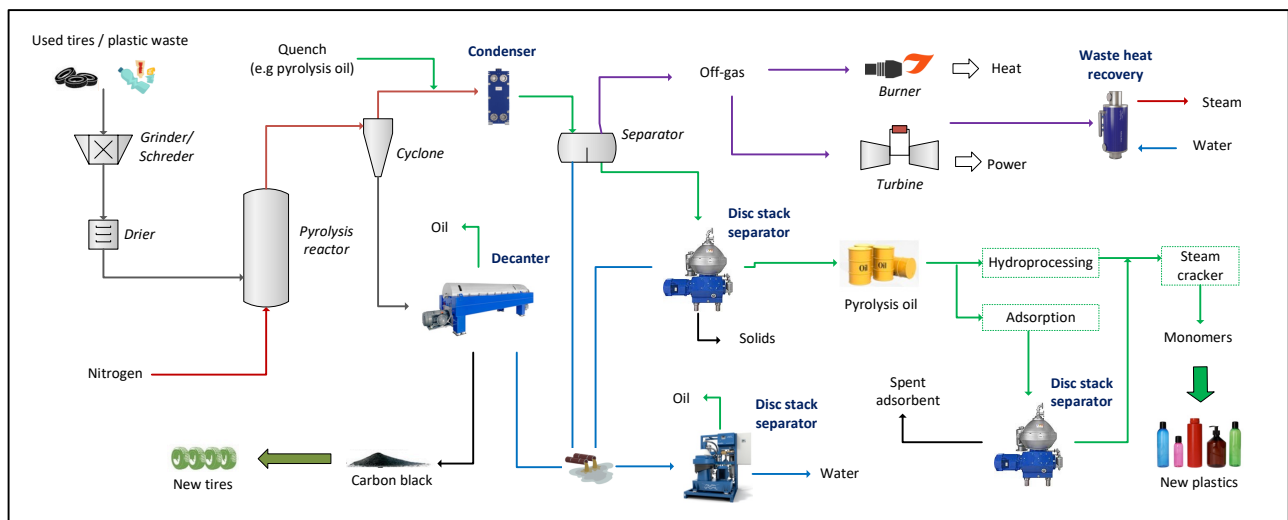


Figure 1. Alfa Laval contributions in chemical recycling of tires and plastic via pyrolysis