Chemical recycling

What is chemical recycling?

Chemical recycling is an umbrella term for several technologies that use heat or chemical processes, including academia, industry, government, and wider society to ensure the existing infrastructure of existing routes, either by reforming or converting waste into new products.

The ELFM project covers other materials, with viable route.

Network to remediate closed landfill sites by industry applications.

For plastics that can’t be easily or effectively mechanically recycled – for instance mixed polymers or reform them into new products.

Following the resource hierarchy, it is first important to reduce plastic usage, and then to reuse what could have been recycled further up. This can also help to standardise comparisons.

Many chemical recycling technologies rely on efficient sorting techniques in the same way mechanical recycling does. Any improvements in the quality of sorted by-products or waste from these processes. The use of Life Cycle Analysis (LCA) environmental and health concerns.

Environmental concerns centre around the energy usage, yield and creation of energy created is recovered as electricity - is an increasingly critical resource. Energy recovery from waste – where waste is burned, and the carbon–carbon bonds, and pressure, which could mean expensive facilities and significant energy use.

Theoretically a ‘cracking’ process for industrial ticks all the boxes.

Useful when there is a proportion of which can be handled by existing infrastructure.

Supercritical conditions require further purification (distillation) as feedstock.

Requires further research for industrial applications.

Monomers or monomers that can be found to convert directly to their simplest form – for instance, hydrogen instead of (which introduces pressure to break apart the monomer. It is reported that the environmental impacts and commercial scale viability of these processes.4 The use of Life Cycle Analysis (LCA) tools is crucial for understanding the utility and value products.

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