

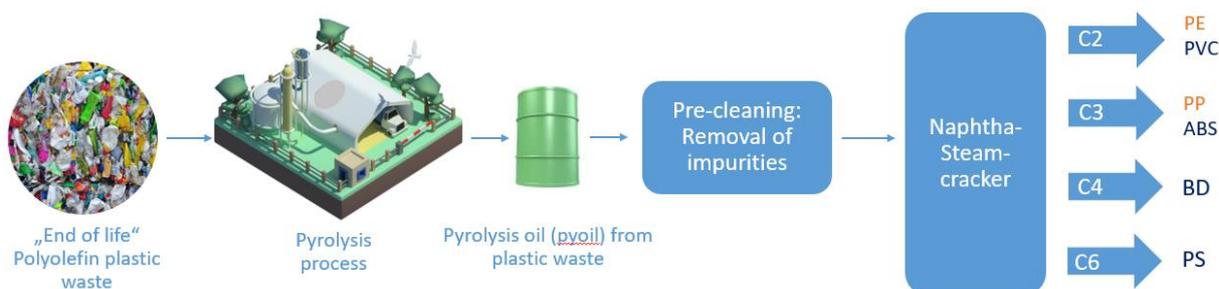
Advanced recycling in the petrochemical industry

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Abstract

INEOS is a global manufacturing company making raw materials and energy used for everyday life. Its products make indispensable contributions to society by providing the most sustainable options for many societal needs. INEOS is driving the transition to a net zero economy by 2050. As part of its greenhouse gas emission reduction strategy, it aims to move to a more circular economy, re-using materials to their maximum extent. INEOS operates 36 individual business units and 194 sites across 29 countries with huge variety of products relating to and used in oil & gas, chemicals and polymers. It generates \$61 billion annually and employs over 26,000 people. We are committed to delivering a circular plastics economy in which products are re-used and recycled to the maximum level, and no plastic waste is disposed to the environment. Our strategy: **Advanced Recycling (Chemical Recycling)**



Pyrolysis of Mixed Plastic Waste

In this method, mixed plastic waste is converted to an oil via a thermal cracking process. The resulting oil is further purified and processed, then used as feedstock in steam crackers to produce the base molecules (ethylene, propylene, butadiene, benzene) for polymer production. This recycling method is developing rapidly and INEOS is at its forefront. The advantage is that it can process a wide range of post-consumer mixed plastic waste that could not otherwise be recycled and would be disposed in landfill or burnt. We recently demonstrated the technology at commercial scale by feeding oils derived from mixed plastic waste to our large olefin unit in Cologne. The process and resulting products have been certified by an independent accreditation body. Our intention is to build now several new pyrolysis recycling plants in partnership with the technology developer Plastic Energy.

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