

## **Revolutionizing Plastics by Groundbreaking Physical Recycling Methods:**

### **Trinseo's Infinite Recycling Technology for a Sustainable Future**

As a sustainable solutions provider, Trinseo has been producing materials with recycled content at a commercial scale for well over a decade. Trinseo aims to significantly reduce the environmental footprint of the plastics we bring to market by decoupling polymer production from fossil-based virgin raw materials. To achieve this, we have developed physical recycling methods for our main polymers in addition to mechanical and chemical recycling.

Physical recycling allows polymers to retain their molecular integrity, offering an energy-efficient process due to high recovery yields. This method relies on the selective dissolution of polymers from post-consumer recycled (PCR) articles and devices, followed by a series of purification steps to separate the polymer from additives and contaminants. Trinseo has developed technologies to recycle polymers from end-of-life (EOL) waste materials infinitely by repairing degraded polymers during the recycling process.

To strategically utilize waste as renewable feedstock in dissolution-based recycling processes, we will discuss Trinseo's approach to physical recycling, highlighting its advantages and limitations. Additionally, we will share comparisons of the product carbon footprint between fossil-based virgin materials and materials recycled by dissolution.