

## Abstract

Corbion has developed a proprietary process to produce 2,5-Furandicarboxylic acid (FDCA) from renewable resources. FDCA has the potential to replace purified terephthalic acid (PTA) in a variety of applications, among which PEF (polyethylene furanoate). PEF gives improved finished product performance, due to better barrier, thermal and mechanical properties. These material properties bring new performance to food and beverage packaging, while also improving the product sustainability.

PEF's better barrier properties allow for extended shelf-life of packaged products. As well, PEF gives the opportunity to avoid the use of unrecyclable multilayer packaging with added barrier layers. PEF's higher glass transition temperature (86-89C) allows for hot-fill applications, without the need to enforce the bottle in the top or shoulder. PEF improves packaging sustainability: when also using biobased ethylene glycol, PEF is 100% biobased, reducing carbon footprint and not emitting any CO<sub>2</sub> after its lifetime. When biobased materials are used in products with longer lifetime, captured CO<sub>2</sub> from the atmosphere is stored in the product.

Corbion is currently scaling-up its production to allow for further market seeding and supply into joint development partnerships. In such partnerships a multitude of applications is researched, among which bottles, film-based packaging, fibres, resins and other applications.