IHS Chemical

Process Economics Program

Report 287

Bio-Based Aromatics

By Michael Arné

December 2013

ihs.com/chemical

PEP Report 287

Bio-Based Aromatics

By Michael Arné

December 2013

Abstract

This report covers the technology and costs to make aromatics from biological feedstocks. We have concentrated on processes to make para-xylene. para-Xylene is a key intermediate in the manufacture of polyethylene terephthalate (PET). When combined with bio-sourced ethylene, bio-based para-xylene offers the opportunity for a 100% plant-based PET bottle.

Three processes are presented: two for the manufacture of para-xylene from corn, and one for its manufacture from cellulosic biomass (wood). The Gevo process uses fermentation to produce para-xylene from corn via isobutanol. The Virent process feeds corn-derived glucose to a two-step catalytic synthesis to give aromatics. The Anellotech fast pyrolysis process makes aromatics from finely ground wood in a modified FCC unit.

Contents

Contents (concluded)

Figures

Tables

Tables (concluded)

