

Green Plasticizer using Jatropha Oil for Plastic Industry

TECHNOLOGY DESCRIPTION

This technology is plant-based and non-edible oil plasticizer made from Jatropha oil.

TECHNOLOGY FEATURES

This technology is developed from fully biodegradable polymer from renewable resources. It is suitable for the medical industry where it can be applied in tissue engineering, wound healing, and drug delivery. It has a high bio-compatibility where it is not toxic to local tissues. It can be mass propagated. It contains high linoleic acid (C18:2) content which gives high percentage of oxirane content upon epoxidation process.

ADVANTAGES

- Biodegradable
- Made from renewable resources
- Eco friendly
- High in linoleic acid
- Safe

INDUSTRY OVERVIEW

Prospect Industry: Plastic manufacturers

The global biodegradable polymer market is estimated at US\$932 million in 2015 and is expected to increase at a 22.5% compound annual growth rate (CAGR) to reach nearly US\$2.6 billion in 2019. Polylactic Acid (PLA) market is expected to garner \$5.2 billion by 2020, registering a CAGR of 19.5% during the forecast period 2013-2020. It is a bio-degradable thermoplastic aliphatic polymer produced from lactic acid using various crops like corn, sugarcane, tapioca etc. as a raw material. Similar to other sustainable bioplastics, PLA market size has a huge great potential as material is being used in various packaging applications of food, beverages and other consumer product that have short shelf-life. PLA market has witnessed a greater demand over the past five to six years. Currently, the largest PLA supplier in Malaysia is LDMRC, Physics Department under the University of Malaya. In 2014, global packaging application garners the highest share of 65.2% in the in global market. This is principally due to the unique mechanical, thermal and barrier properties of PLA, which makes it a suitable material for packaging applications. Based on geography, North America is the largest producer and consumer of PLA and accounted for about 49.6% of the global consumption in 2014. The North American region would continue to lead the market owing to large production capacity, feedstock abundancy, supportive legal framework, and rising consumer awareness for sustainability. However, the Asia Pacific market would grow at the highest rate due to upcoming production facilities in China and Thailand coupled with growing adoption of PLA market size in China, Thailand, Japan, South Korea and Taiwan. This provides ample opportunities to market this product worldwide.



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