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Eco-extraction process using a bio-based solvent EcoXtract® M and more.

Norbert Patouillard, 23-12-1970

Pennakem LLC has practiced renewable chemistry for more than 60 years by utilizing the waste biomass from the corn and sugar cane industries. Pennakem's **Solvent** product line is targeted at a range of applications including chemical processing, agro-chemical formulations, surface treatment (paint stripping or metal degreasing) and natural product extraction. This last segment of market is covered by its **EcoXtract® M** product.

More recently Pennakem expertise in catalysis allows developing a new bio-based solvent having also some interesting properties in such field. This product derived from our furan chemistry is the 1,2-pentanediol traded as **Pentiol Green+™** which is finding many interesting properties in the eco-extraction applications.

Thanks to its specific physical chemical properties our **EcoXtract® M** has the required characteristics (boiling point, polarity, safety properties) to replace petrochemical derived solvents commonly employed for extraction of natural products. The first studies done by external labs have shown great promises in use of **EcoXtract® M** for extraction of lipophilic substrates such as oils and butters. High extraction yields were found comparable to other common solvent systems using hexane, cyclohexane, dichloromethane, ethyl acetate.

Pentiol Green+™ belongs to the alkane diol family, and has such is formulated with other similar chemical structures to find application in inks or cleaning systems. Its unique properties are making it a valuable ingredient in cosmetic industry, as a substituent of conventional systems based on many hazardous undesired petrochemicals. Recently, interesting solvent properties were demonstrated for hydrophilic ingredients extraction fitting the eco-extraction approach for the cosmetic segment.

This solvent range contributes to reduce the carbon footprint of processes and formulations where they are employed. **EcoXtract® M** and **Pentiol Green+™** will help to reduce the environmental impact of chemical processing and make the world better for the next generation.