

Combining Biology with Chemistry to Deliver 100% Bio-Based Butanediol



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GC Innovation America and Johnson Matthey Davy Technologies (JM Davy) have combined forces and processes to bring cost-competitive, 100% bio-based 1,4-butanediol (BDO) to the market. These processes combine the power of biology, using GC's bio-succinic acid made from sugar, with chemistry, using JM Davy's commercial BDO process, to produce 100% renewable bio-BDO at comparable pricing to petroleum-based BDO.



LOWER CARBON FOOTPRINT

- Bio-BDO has significantly less green house gas (GHG) emissions compared to petroleum-based BDO
- CO₂ is used as a feedstock in the process to produce bio-BDO



NON-GMO PROCESS

- Bio-catalysts (microorganisms) used in the production of bio-BDO are developed and optimized in their natural state
- No foreign genes were introduced or used in the development of the microorganism



NO GREEN PRICE PREMIUM

- Renewable feedstocks are less expensive and less volatile than petroleum-based feedstock prices



HIGH PERFORMANCE

- Bio-BDO is market grade and a drop-in replacement for petroleum-based BDO

Cost-Competitive Bio-Butanediol

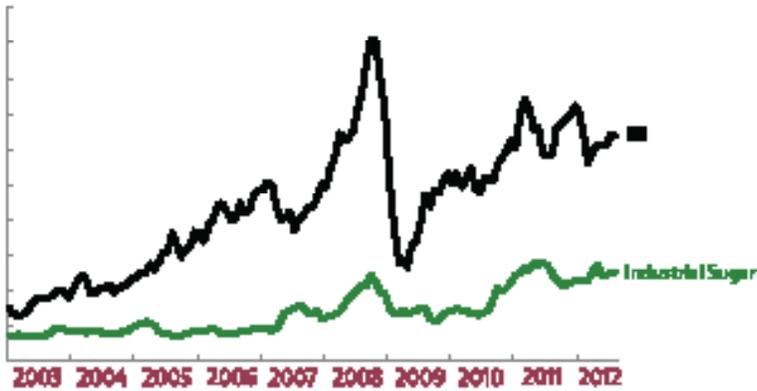
Advantages and Environmental Impact

Process Advantages

- Reduced price volatility
- 100% bio-based
- Reduced carbon footprint (GHG emissions)
- Captures CO₂
- Superior carbon efficiency

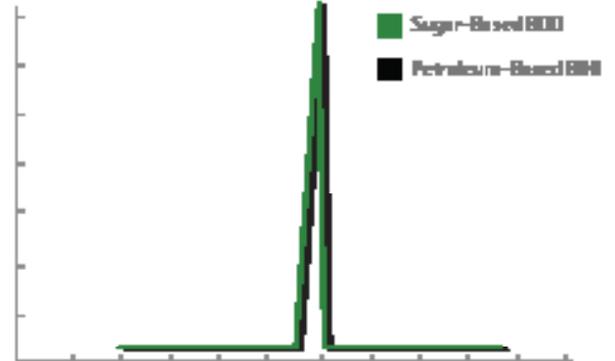


Historical Feedstock Pricing



Crude oil is much more price volatile than industrial sugar and is more expensive as a source for building molecules.

Gas Chromatography Trace Chart



Quality of bio-based BDO is identical to petroleum-based BDO

Here and Now: A Continuous Supply of Bio-BDO

Bio-BDO is available by converting bio-succinic acid produced in GC's Lake Providence plant to Bio-BDO in an existing BDO plant using JM Davy's technology.

BIO-BDO AVAILABLE TODAY!



GC's bio-succinic acid plant in Lake Providence, LA

Not All Chemicals Are Created Equal™



About GC Innovation America

GC Innovation has been a leader in the bio-chemical industry since its formation in 2004. With Corporate Headquarters located near the historic city of Boston, the company thrives in the culture of innovation and creativity that few cities around the world can claim. Employing some of the best and brightest minds in the fields of biology, chemistry and engineering, GC Innovation has a solid track record of commercial success with world-class partners and customers.



GC's bio-succinic acid plant in Lake Providence, LA.



Johnson Matthey
Davy Technologies

About Johnson Matthey Davy Technologies

Johnson Matthey Davy Technologies (JM Davy), has a global business in petrochemicals technology development and technology licensing. The Company has its headquarters in London and has a Technology Centre in Stockton-on-Tees. It licenses a range of proprietary process technologies such as Methanol, Fischer Tropsch, SNG, Butanediol, Detergent Alcohols, Oxo Alcohols and more. Myriant and JM Davy are working closely to deliver bio-BDO to JM Davy's global customers.



Plant utilizing JM Davy's BDO process.

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