Sustainable Process for the Production of Bio Propylene Glycol from Primary Oleochemical Glycerin

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For a long time, glycerin was produced petrochemically from propylene, before a significant glycerin excess grew as a byproduct from biodiesel production. With the hydrogenolysis of glycerin to Propylene Glycol, a new outlet for glycerin is introduced and glycerin refining becomes economically more attractive. Propylene Glycol - also named 1,2-propanediol, PG or MPG - is a versatile chemical with various industrial applications such as usage in polyester resins, de-icing agents, liquid detergents and pharmaceuticals.

The conventional petrochemical-based process to produce Propylene Glycol is highly dependent on the upstream infrastructure for propylene and propylene oxide and has much lower yields. In contrast, the Bio Propylene Glycol (BioPG) technology enables the industry to produce Bio Propylene Glycol (BioPG) from refined glycerin.

The BioPG process has the following numerous competitive advantages over the conventional process route:

- More attractive feedstock price due to wide glycerin availability;
- High purity due to absence of oligomers and polypropylene glycols in the final product;
- Less process risk due to the avoidance of hazardous chemicals such as propylene oxide;
- More sustainable process with a reduced carbon dioxide footprint by up to 70%
- Suitable for any oleochemical producer due to moderate plant capacity;
- An optimized heat integration makes a low steam consumption possible while maintaining full operational flexibility;

The presentation describes the details on the commercially proven leading-edge technology for the production of Bio propylene glycol from one of the very common oleochemicals glycerin.