Large Scale Bio-Succinic Acid Production

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Motivation

- Bio-succinic acid is proven to help in balancing skin pH to the optimal level which is critical for skin health.
- Succinic acid targets skin conditions like acne due to its antibacterial properties and microbiome support.
- Projected global market growth and multi-industrial use.

Abstract

Succinic acid is an emerging ingredient in the skincare industry that is normally produced using petrochemical processes. Skin pHix aims to use a sustainable, apple pomace feedstock to supply 39,000 tonnes of bio-succinic acid to the global skin care manufacturing market. The proposed plant will be located in India and produce 99% pure bio-succinic acid crystals.

Methods & Materials

The production pathway that we explored was to convert extracted sugars, such as glucose to Succinic Acid. This will be achieved through 5 major processing steps:

1. Enzymatic Hydrolysis
2. Bacterial Fermentation
3. Membrane Separation
4. Distillation
5. Crystallization

Various by-products are produced from the examined pathway. Some of which are value added materials, including:

- Lactic Acid
- Formic Acid
- Acetic Acid
- Organic, carbon-based solids

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References

1. Skin pHix, 2024, "Production of Bio-Succinic Acid"
2. Skin pHix, 2024, "Bio-Succinic Acid Production Presentation"

Safety, Environment, & Social Impact

- Safety considerations have been thoroughly analyzed to minimize risk throughout our plant
- Sustainability drives the Skin pHix mission to pioneer a new sector of the skincare manufacturing industry
- Positive Social Impact is expected from the development of the Skin pHix manufacturing plant

Results & Conclusions

- Safety considerations have been thoroughly analyzed to minimize risk throughout our plant
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Succinic Acid
Mixed Acids
Solid Waste

Revenue Source Distribution

29% Process Yield
15 Year Plant Operation Life

4.5-5.75 pH

Projected global market growth and multi-industrial use.