

Introduction

- Due to the COVID-19 pandemic, there is excess production of Isopropyl Alcohol (IPA) and Propylene.
- common feedstock) with 7.7% CAGR
- (currently no production in Canada)
- which produces propylene as a byproduct)



Safety and Environmental Assessment

• HAZOP Deviations Controlled:







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Pressure
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Temperature

Abnormal flow



Hydrogen production contributes to global sustainability



Uses unused propylene from refinery



264 MT of CO₂ produced

Wastewater stream treated and discharged meeting provincial regulations

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Yellow = H_2 Separation, Purple = Acetone Separation, **Green** = Storage Vessels = Acetone and H_2 storage.

[5] Luyben, W. L. (2010). Design and control of the acetone process via dehydrogenation of 2-propanol.

[4] Rivas, R. C., & Choy, V. L. (2015). Design of an acetone production plant via catalytic dehydrogenation of isopropyl alcohol.