

Catalyst and synthesis process for the production of symmetric esters (NT003)

The transformation of biobased alcohols such as ethanol, butanol or fatty alcohols presents a major challenge in the biomass valorization.

The patented invention allows to obtain, from an alcohol, the corresponding symmetric ester.

Keywords: Symmetric esters, Cerides, Alcohol dehydrogenation

Intellectual property: WO2015/067889 (entry into the national phases : Europe, USA, Canada, Malaysia, Japan)

> Presentation of the technology : Catalytic coupling of alcohols by dehydrogenation without oxidant

- Bulk conditions without solvent nor additive
- Low catalytic charges (20 to 250 ppm)
- Selective process with high conversion
- Concomitant production of valuable hydrogen gas
- All kind of alcohols can be converted : linear or branched from C2 to C18+

> Competitive advantages

- Solvent and additive free reaction
- Catalytic process
- High selectivity and conversion
- Concomitant production of valuable hydrogen gas
- Oleochemistry

> Applications

- Solvents
- Flavours and fragrances
- Cosmetic industry
- Food industry...

> Development stage

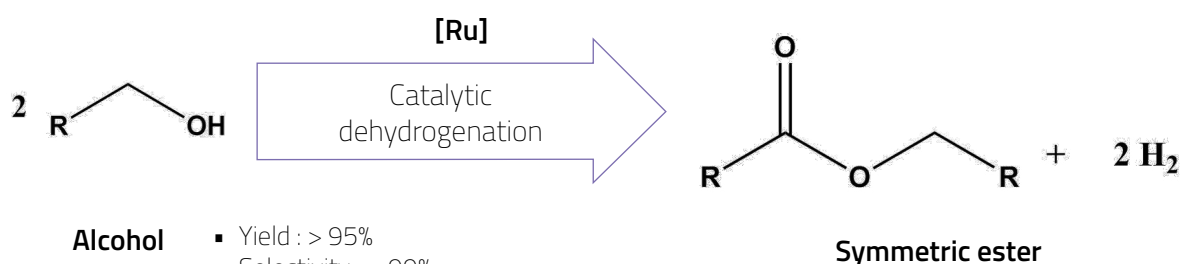
- Technology validation in laboratory environment

1 2 3 4 5 6 7 8 9

> Development stage

- Screening on several alcohols
- Scaling-up development
- Continuous flow process design

> Technical specifications



- Yield : > 95%
- Selectivity : > 99%
- TOF = 8 000 h⁻¹
- TON = 40 000 mol of product/mol catalyst