



# Diversifying and Pioneering in Pharma Segment

By Rallis | Category: Implemented Innovations

Rallis celebrated 2016-17 as the Year of Transformation to diversify the business for sustainable growth by introducing new products. The team decided to move into Pharma segment due to its Market size & Impact on Society. This project has importance because of its link with the growth agenda & mission statement of the organization. Inspired by Make in India concept, this project was aimed to reduce the dependency on external manufacturers by providing alternate to China. To start with, Rallis listed feasible products having huge potential and narrowed down to Cyclopropyl Acetylene (CPA) product due to its use in multiple API's especially anti-HIV drug therefore, huge market potential & societal impact.



## The Context

Need for business diversification for sustainable growth: Changing market dynamics coupled with growth agenda of Rallis to do contract manufacturing

Strong Societal Impact due to use in Multiple API's (Active Pharmaceuticals Ingredients) especially anti-HIV drugs



## The Innovation

A new process was developed with New generation chemicals and further it was scaled up in Pilot Plant followed by its commercialization.

**Innovation at Lab:** The patented process used in China involves use of Quinoline and other hazardous chemicals in the manufacturing of CPA with lower conversion and yield. Many trials were conducted around this process and eventually a new process in R&D was developed with new generation chemicals. Low cycle time, high conversion and better yield than the patented process were some advantages of the new process.

**Innovation at commercial:** The process was optimized for reduction in impurities & cycle time by introducing (-40) °C chilling system in reaction stage and for external chilling in quenching stage. Also, the impurity separation from product was achieved after installing tailor made distillation column with optimum height and filled with high efficiency packing.



## Overcoming Challenges

### Challenge #1

Reduction of cycle time at Reaction stage: Achieved reduction in cycle time by applying (-40) °C brine in place of (-20) °C for circulation in jacket to absorb heat generated during reaction.

### Challenge #2

Controlling of impurities generated during quenching: As quenching time increases; impurity profile also increases. The time cycle was minimized by providing external chilling of (-40) °C with additional Heat exchangers made of alloy.

### Challenge #3

Separation of impurities during distillation: Designed new distillation column with high efficiency packing which resulted in reduced distillation time & improved Purity & yield.



Anti  
HIV

Impact  
of the  
Innovation

revenue impact  
₹600 mn