



**ALBEMARLE®**

# JADE and TOPAZ

## Breakthrough FCC catalyst assembly technologies

Albemarle has reached an innovative breakthrough in fluidized catalytic cracking (FCC) catalyst assembly technologies with JADE and TOPAZ. These technologies reinforce Albemarle's industry-leading position in residue processing and short-contact-time operations while strengthening its position for other applications such as VGO.

Catalyst assembly is the process that controls the composition, structure and active phases in three dimensions in a catalyst particle. In this sense, the production of a solid FCC catalyst resembles the assembly of a mechanical watch or an electronic chip, rather than the making (mixing) of a homogeneous chemical compound. The interactions (processes) that occur during the catalyst particle preparation procedure will determine both the catalytic and the physical properties of the catalyst (Figure 1).

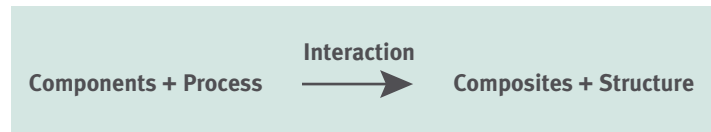


Figure 1: Catalyst assembly technology.

JADE is a leap forward in catalyst assembly technology that has been developed from the traditional manufacturing process (A-P-S) for FCC catalysts used in our plants in Amsterdam (the Netherlands), Pasadena (Texas) and Santa Cruz (Brazil).

With JADE catalysts, Albemarle has improved the boundaries of activity and selectivity of catalysts for residue applications and strengthened its position in VGO applications over those of current competitors. Specifically, JADE is a distinct catalyst assembly technology that has opened up the flexibility to improve catalyst accessibility (to hydrocarbons) and/or catalyst physical properties, while enabling the incorporation of certain novel catalytic materials. FCC catalysts with improved hydrocarbon accessibility provide increased intrinsic activity for short-contact-time applications and have helped to consolidate our strong leading position in residue processing.

TOPAZ is a second breakthrough catalyst assembly technology that has been developed from the unique Filtrol® manufacturing process for FCC catalysts, which was utilized in the former Los Angeles, USA, FCC plant.

TOPAZ enables Albemarle to produce Filtrol products with significant improvements in coke selectivity and bottoms conversion and that offer superlative performance and improved physical properties.

These new catalyst assembly technologies (JADE and TOPAZ) are now used in the same plant, and have enabled consolidation of Albemarle's operations in Pasadena. Commercial operations at many of Albemarle's key clients have confirmed the excellent performance of these new technologies in both residue and VGO applications.

**For more information on this or other Albemarle products and technologies, please contact your Albemarle representative.**

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