CATALYSTS

UOP Coverdeckless™ Reactor Design

Design enhancement for fixed-bed reforming reactors



UOP's Coverdeckless reactor design allows optimum utilization of catalyst load and reduced maintenance in fixed-bed reforming reactors.

Introduction

UOP's Coverdeckless design is a simple, low cost modification to fixed-bed reforming reactors, which allows maximization of the catalyst volume, optimum utilization of all catalyst in the reactor and reduced maintenance during reactor turnaround.

Applications

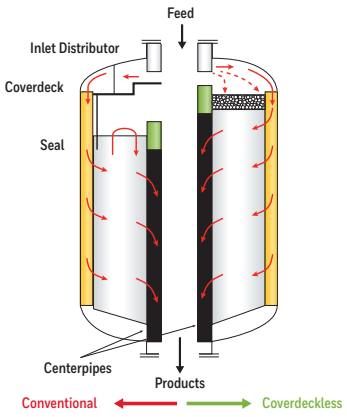
UOP's Coverdeckless design is applicable to any radial flow fixed-bed reforming reactor and can replace either conventional or flexible coverdeck. More than 20 units are successfully operating with this design.

FEATURES & BENEFITS

UOP employed Computational Fluid Dynamics computer modeling to develop the Coverdeckless design in order to achieve pressure balance between the radial bed and the seal catalyst, and to eliminate any possible disturbance to the top of the catalyst bed.

After a detailed review of the reactor internals, design criteria are applied such that modifications typically include the removal of the coverdeck and outer shield, allowing maximum catalyst to be loaded into the reactor and a greater uniformity of flow through the seal catalyst.

UOP Reactor Design



UOP's latest vapor peeler inlet distributor is installed to minimize vapor velocity and bed disturbance at the top of the catalyst bed.

The UOP Coverdeckless design allows maximum catalyst to be loaded into the reactor resulting in:

- Increased octane while maintaining cycle length, and/or
- Increased reformate and hydrogen yields while maintaining cyclelength, and/or
- Increased cycle length at existing conditions

Increased uniformity of flow over the seal catalyst leads to:

- More even coke lay down
- Optimum utilization of catalyst
- Greater efficiency of catalyst regeneration

The simplicity of the UOP Coverdeckless design means:

- The modifications can be implemented within the reactor turnaround time
- Once Installed, no internals to remove prior to catalyst loading
- Significant reduction in reactor turnaround time and maintenance costs
- Without coverdecks, catalyst may be dense loaded by machine

Once installed, the UOP Coverdeckless design is suitable for future catalyst reloads at no additional cost.

For more information

www.uop.com

UOP LLC, A Honeywell Company
25 East Algonquin Road
Des Plaines, IL 60017-5017, U.S.A.
www.uop.com

© 2016 UOP LLC. All rights reserved.
The information in this document should not be construed as a representation for which UOP assumes legal responsibility, or an authorization or recommendation to practice a patented invention without a license.
UOP4516-24a October 2016