Heat Integrated Distillation Column (HIDiC)

**Features**

**SUPERHIDIC®** provides excellent energy saving of above 50% compared to conventional distillation systems in various industrial applications. **SUPERHIDIC®** offers attractive economics without utilizing special equipment, but by applying well-proven technology related to distillation and heat transfer. Moreover, good maintainability can be achieved with **SUPERHIDIC®**.

**Basic Concept or Summary**

**SUPERHIDIC®** realizes the concept of the Heat Integrated Distillation Column (HIDiC), which has been recognized as the ultimate energy saving distillation system, in a simplified manner.

In developing **SUPERHIDIC®**, the following expertise obtained using a new thermodynamic analysis method was applied:

- Internal heat exchange is not necessarily needed in the every stage of the column, but can be done discretely.
- Since the amount of internal heat exchange differs depending on the composition inside the column, internal heat exchange should be performed accordingly.
- Most often, stages having the similar demand of heat duty are not at the same elevation when the rectifying and stripping sections are set in parallel.
Excellent energy saving and cost saving can be expected for the following conditions by introducing \textit{SUPERHIDIC}® in either existing column modification or new installations:
- Temperature difference between the overhead and the bottom lower than 80°C
- Distillation columns with a large utility cost reduction potential
- Large scale reboiler and/or condenser duty
- Process units, which have been so far confirmed for the \textit{SUPERHIDIC}® application with excellent energy conservation

The figure below shows processes which are confirmed to be suitable for the application of \textit{SUPERHIDIC}®.

\textit{SUPERHIDIC}® has been awarded the "Nikkei Global Environmental Technology Award Excellence Award" from the Nikkei and "Engineering Excellence Award" from ENAA (Engineering Advancement Association of Japan) for its excellent energy-saving performance, uniqueness and potential contribution to low carbon society.

### Effects or Remarks

### Installation in Practice or Schedule

**Domestic**  
Commercial unit in operation at a petrochemical plant.  
Expanding our business towards the domestic refinery, petrochemical and chemical plants.

**Overseas**  
Expanding our business for international refinery, petrochemical and chemical plants. In addition, promoting sales along with a partner company with worldwide sales networks.

### Contact

Toyo Engineering Corporation  
\textit{SUPERHIDIC}® Business Department  
2-8-1 Akanehama, Narashino-shi, Chiba, Japan  
Tel: +81-47-454-1571  Fax: +81-47-454-1718  
URL: http://www.toyo-eng.com  E-mail: superhidic@toyo-eng.com