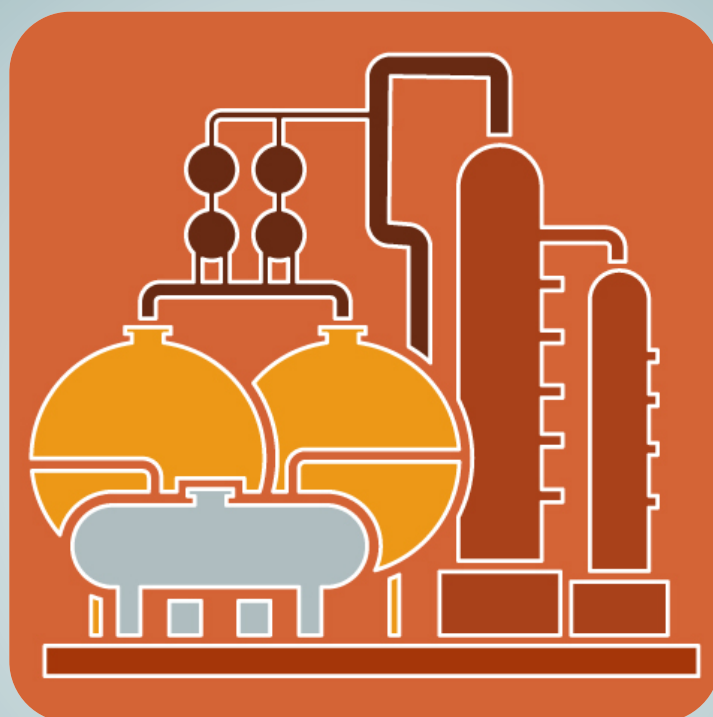


Chemical Process Design / Diseño de Procesos Químicos

Design Project (General Information).
Aspen Equipment Symbols



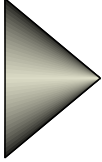
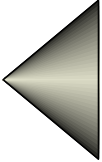
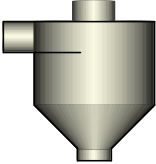
Javier R. Viguri Fuente
Eva Cifrian Bemposta

Department of Chemistry and Process and Resource Engineering
GER Green Engineering and Resources Research Group



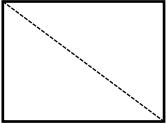
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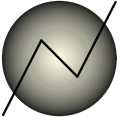
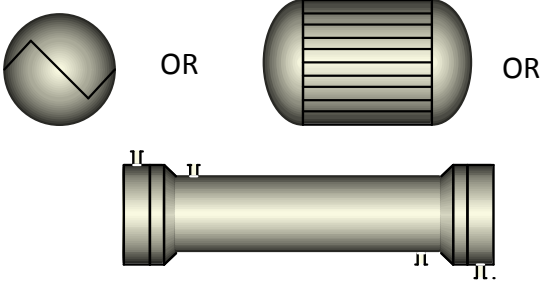
Mixer/Splitter

		
Mixer	Splitter	Stream Splitter. Cyclone

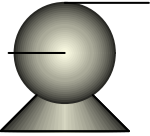
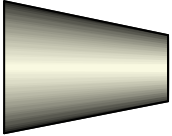
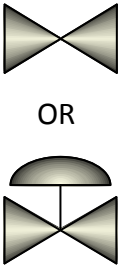
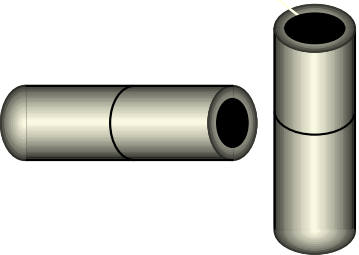
Separators

		
Flash	Decanter	Membrane Separation

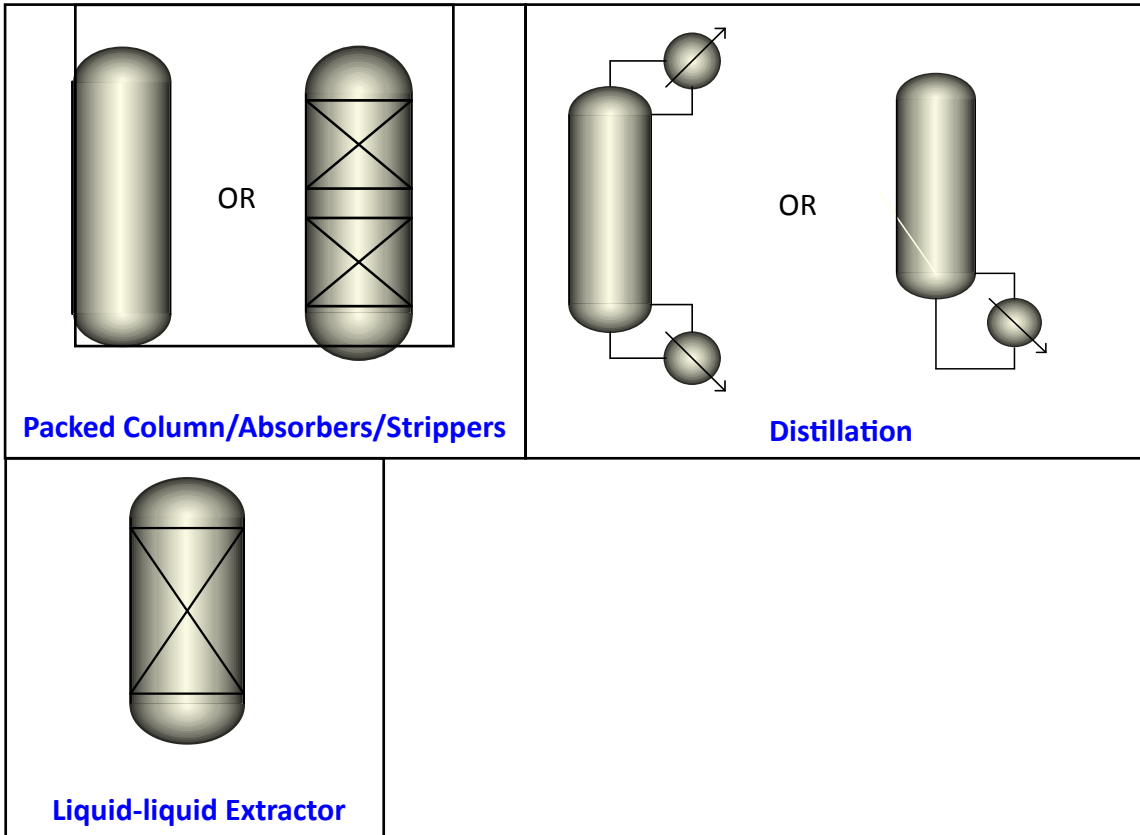
Exchangers

	
Heater, Cooler (Utilities)	Heat Exchanger (Process Stream interchange)

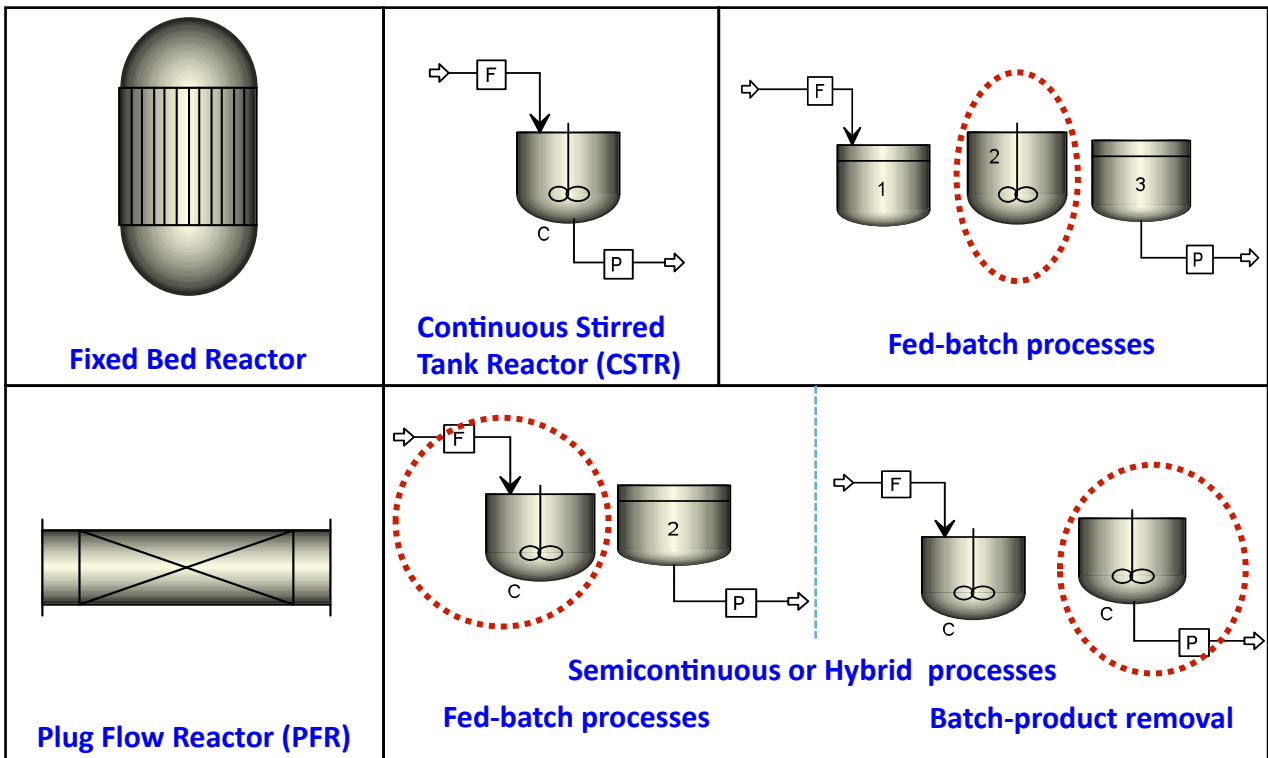
Pressure Changer

			
Pump	Compressor/Turbine	Valve	Pipe

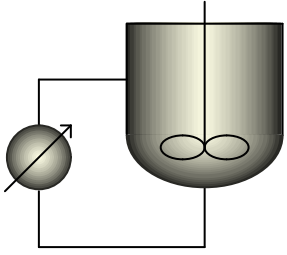
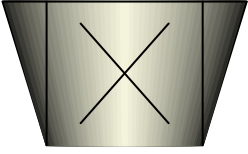
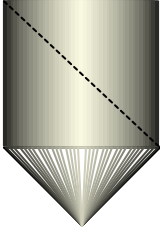
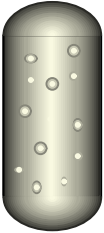
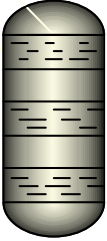
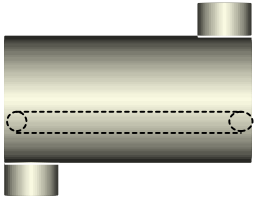
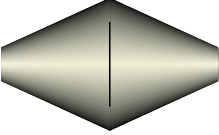
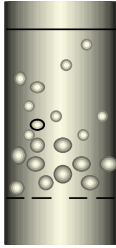
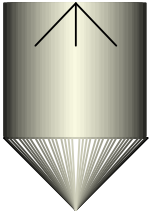
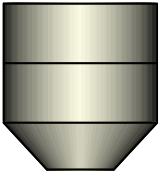
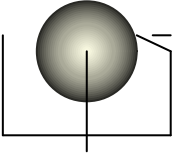
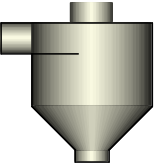
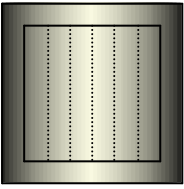
Columns



Reactors



Solids

 <p>A schematic diagram of a crystallizer, showing a cylindrical vessel with a central vertical shaft and two horizontal stirrer blades at the bottom. A circular reservoir is connected to the side of the vessel, with an arrow indicating the flow of material into the vessel.</p>	 <p>A schematic diagram of a crusher, showing a trapezoidal vessel with two diagonal lines forming an 'X' shape across the interior, representing the crushing mechanism.</p>	 <p>A schematic diagram of a screen, showing a cylindrical vessel with a conical bottom section. A dashed line indicates the screen surface, and several lines radiating from the bottom represent the screen's structure.</p>
 <p>A schematic diagram of a single-stage solids washer, showing a vertical cylindrical vessel with several small circles inside, representing the washing process.</p>	 <p>A schematic diagram of a multistage solids washer, showing a vertical cylindrical vessel with several horizontal sections, representing multiple washing stages.</p>	 <p>A schematic diagram of a dryer, showing a horizontal cylindrical vessel with a central shaft and several horizontal blades, representing the drying process.</p>
 <p>A schematic diagram of a classifier, showing a diamond-shaped vessel with a vertical shaft and a horizontal blade at the bottom, representing the classification process.</p>	 <p>A schematic diagram of a fluidized bed, showing a vertical cylindrical vessel with a central shaft and a horizontal blade at the bottom. Small circles inside represent the fluidized bed.</p>	 <p>A schematic diagram of a scrubber, showing a vertical cylindrical vessel with a conical bottom section. An upward-pointing arrow indicates the flow of material, and lines radiating from the bottom represent the scrubbing mechanism.</p>
 <p>A schematic diagram of a centrifuge filter, showing a cylindrical vessel with a conical bottom section, representing the centrifugal separation process.</p>	 <p>A schematic diagram of a filter, showing a spherical vessel with a central shaft and a horizontal blade at the bottom, representing the filtration process.</p>	 <p>A schematic diagram of a hydrocyclone, showing a cylindrical vessel with a conical bottom section and a horizontal inlet/outlet pipe, representing the cyclonic separation process.</p>
 <p>A schematic diagram of an electrostatic precipitator, showing a rectangular vessel with several vertical lines inside, representing the electrostatic collection mechanism.</p>		