

## WHAT TIES THE CHEMICAL PROCESS INDUSTRIES TOGETHER?

All major segments of the chemical process industries (CPI) use the same types of equipment and services.

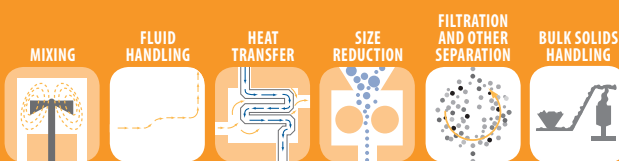
### RAW MATERIALS

Every process plant in the CPI starts with raw materials

### PRETREATING

#### UNIT OPERATIONS

The raw materials are pretreated by a variety of unit operations.



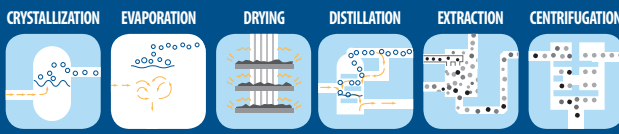
### CHEMICAL CONVERSIONS

Pretreated materials are then run through a reactor – a cracker, digester, fermenter, kiln, smelter, or some other unit– where chemical changes take place.

### SEPARATION & PURIFICATION

#### UNIT OPERATIONS

Whether a semi-finished product or intermediate, the materials need to be separated from other wastes or byproducts and purified.



### FINISHED PRODUCTS

Chemical Engineering subscribers produce a myriad of finished products covering major industry segments within the CPI market.

### SOFTWARE, AUTOMATION AND CONTROL

This technology sustains the entire operation, supporting safety and efficiency:

- Process simulation
- Computer-aided modeling
- Computer-aided design
- Enterprise resource planning
- Supply chain management
- Analyzers
- Instrumentation and controls
- Diagnostics
- Data recording and transmission
- Automation and control systems

### ENVIRONMENTAL, HEALTH, SAFETY AND SECURITY

Throughout the process, the CPI must ensure the health and safety of its workers and their surroundings.

The CPI apply diverse equipment and techniques to manage and treat the waste that they generate and to achieve more sustainable processes.

Meanwhile, they also specify a range of safety tools for personnel and process.

The CPI includes all industry segments that:

**1**

Take raw materials such as minerals, petroleum or even air

**2**

Apply chemical, thermal, or mechanical processes to them, such as oxidation, polymerization, distillation or filtration

**3**

And produce end products such as plastics, paper, paint, pharmaceuticals, soap, gasoline, or fertilizers for commercial or consumer use

## THE CPI MARKET DEFINED

It's more than just the chemicals market.

### MAJOR INDUSTRY SEGMENTS IN THE CPI:

- Chemicals & Petrochemicals
  - » Inorganic Chemicals
  - » Plastics Materials & Synthetic Resins
  - » Pharmaceuticals
  - » Soaps & Detergents
  - » Paints & Allied Products
  - » Organic Chemicals
  - » Fertilizers & Agrichemicals
  - » Adhesives & Sealants
- Petroleum Refining
- Nonferrous Metals
- Stone, Clay, Glass & Ceramics
- Pulp & Paper
- Food & Beverages
- Rubber & Misc.
- Other Manufacturing

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In each issue, *Chemical Engineering* editorial covers a wide range of topics allowing readers to find in-depth articles that are relevant and valuable to their area of the industry. Topics relate to the full CPI as opposed to focusing on one particular area in the market.