Ethylene

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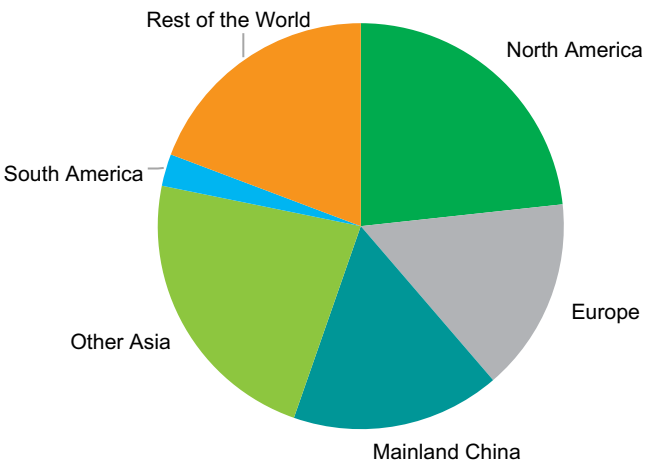
Abstract

Ethylene is primarily a petrochemically derived monomer used as a feedstock in the manufacture of plastics, fibers, and other organic chemicals that are ultimately consumed in the packaging, transportation, and construction industries, as well as a multitude of other industrial and consumer markets. Nondurable or consumable end uses—in particular, packaging—account for more than half of ethylene derivative consumption worldwide. One particular plastic resin, polyethylene, accounts for the majority of total ethylene consumption. Because ethylene is one of the largest-volume petrochemicals worldwide, with such a diverse derivative portfolio (including nondurable and durable end uses), ethylene consumption is sensitive to both economic and energy cycles. Moreover, because of its size and broad usage, ethylene is often used as a benchmark for the performance of the petrochemical industry as a whole.

The following pie chart shows world consumption of ethylene:

World consumption of ethylene—2019



Source: IHS Markit

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The majority of the increased consumption over the last five years is from Northeast Asia, North America, and the Middle East; within these three regions, ethylene derivative capacity has been developed to capitalize on superior ethylene cost-competitiveness (Middle East, North America) or to serve booming markets (Northeast Asia). Overall demand for ethylene derivatives is now fueled primarily by the emerging world, and is projected to further grow over the foreseeable horizon.

Polyethylene (HDPE, LDPE, and LLDPE) is the major outlet for ethylene. The next-largest market is ethylene oxide (EO), used primarily to produce ethylene glycol (EG), which itself is used primarily in the production of PET (for polyester fibers,

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PET bottles, and polyester film). The third-largest outlet is ethylene dichloride (EDC), which is used for the production of PVC. Other major ethylene uses include ethylbenzene, alpha-olefins, and vinyl acetate. Overall, ethylene demand is exposed to the broader economy, underpinning diverse sectors. Some derivatives tend to be more cyclical as they are ultimately used to produce durables (EDC, EB, alpha-olefins, acetyls), while others (HDPE, LDPE, LLDPE, EO, or linear alcohols) tend to be more resilient as they are used primarily in consumable products.

Over the next five years, global consumption of ethylene is forecast to grow faster than average world GDP growth rates. Polyethylene production will account for the largest share of new ethylene consumption, followed distantly by ethylene oxide and ethylene dichloride. Ultimately, ethylene demand will be driven primarily by growth of polyethylene-based consumables; increasing PET fiber, bottle, and packaging demand; and increasing requirements for PVC used in construction and pipe applications. Furthermore, the recent ban on waste material imports into mainland China is bound to further support incremental demand growth for virgin plastic material (polyethylene for instance). Mainland China alone is projected to account for a large percentage of new ethylene demand anticipated through 2024; the growing middle class, improving living standards, and fast-developing infrastructure is driving significant ethylene demand growth.

For more detailed information, see the table of contents, shown below.

IHS Markit's Chemical Economics Handbook – ***Ethylene*** is the comprehensive and trusted guide for anyone seeking information on this industry. This latest report details global and regional information, including


Global summary; regional coverage


Producers with annual capacities and plant sites


Production figures and trends


Consumption and forecasts by end use application


Manufacturing processes and environmental issues


Trade – imports and exports

Key Benefits

IHS Markit's Chemical Economics Handbook – ***Ethylene*** has been compiled using primary interviews with key suppliers, organizations and leading representatives from the industry in combination with IHS Markit's unparalleled access to upstream and downstream market intelligence, expert insights into industry dynamics, trade and economics.

This report can help you:

- Identify trends and driving forces influencing chemical markets
- Forecast and plan for future demand
- Understand the impact of competing materials
- Identify and evaluate potential customers and competitors
- Evaluate producers
- Track changing prices and trade movements
- Analyze the impact of feedstocks, regulations, and other factors on chemical profitability

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