

Plasticizers

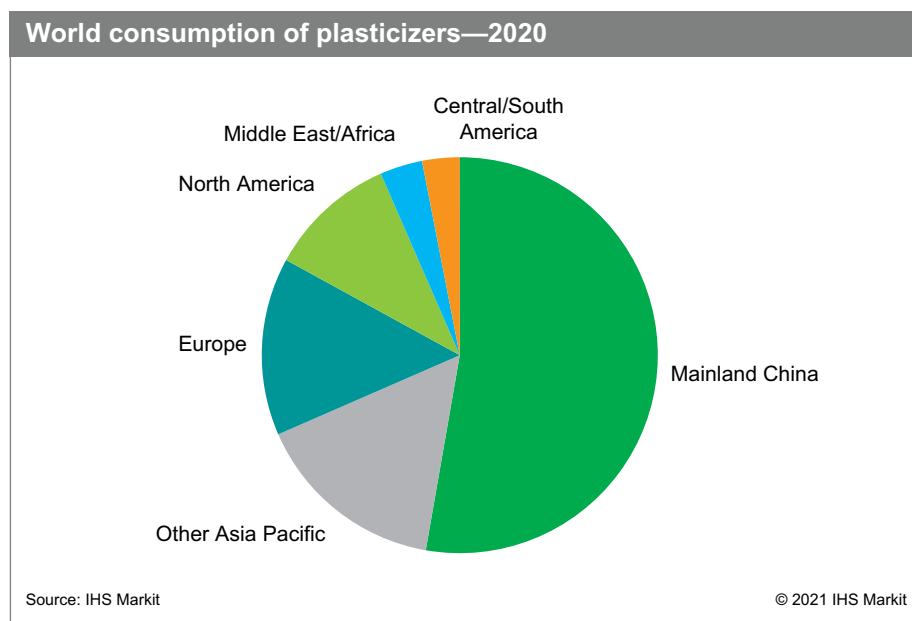
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Abstract

Flexible polyvinyl chloride (PVC) accounts for 80–90% of global plasticizer consumption. Flexible PVC (and thus plasticizers) is found in the following applications: construction (flooring, wall coverings), electrical (wire and cable jacketing), consumer goods (toys, footwear, etc.), packaging, transportation (inside and outside of vehicles), furnishings, and medical uses (tubing, blood bags). Continued global demand for flexible PVC will lead to continued growth for plasticizers. Demand for most downstream plasticizer markets is greatly influenced by general economic conditions. As a result, demand for plasticizers largely follows the patterns of the leading world economies. Mainland China is the single-largest plasticizer market in the world, accounting for over half of world consumption in 2020; it also has the highest forecast consumption growth during the next few years, spurred by increased plasticizer consumption in goods for both domestic and export markets. Overall, global plasticizer consumption will grow at a rate of about 3.5% per year in the next few years.

Phthalate esters, based on phthalic acid, are the main types of plasticizers used since they satisfy a broad range of processing and performance requirements, as well as a large number of markets. Major phthalates include di(2-ethylhexyl)phthalate (DEHP), also known as dioctyl phthalate (DOP); diisononyl phthalate (DINP); diisodecyl phthalate (DIDP); and di(2-propylheptyl) phthalate (DPHP). Nonphthalate plasticizers are not based on phthalic acid, and have a different chemical structure and toxicological profile. These include terephthalates (the most common is dioctyl terephthalate [DOTP]), epoxy, aliphatics, trimellitates, polymeric, phosphates, and others.

The following pie chart shows world consumption of plasticizers:



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Phthalates accounted for over 55% of world consumption of plasticizers in 2020, down from approximately 60–65% a few years ago; they are forecast to account for 50–55% of world consumption in the coming years. The decrease in market share has largely been due to the following:

- Rapid consumption growth for nonphthalate plasticizers, mainly terephthalates, epoxy, aliphatics, and benzoates, as replacements for DEHP and other phthalates, which are regulated in some regions because of potential human health risks
- Continued growth of nonphthalates in different applications and markets
- Ongoing pressure from retailers and consumers to limit the use of phthalates, especially in developed regions

Overall, phthalates will continue to exhibit modest growth. For example, DINP will experience growth throughout the world. World consumption of phthalate plasticizers is forecast to grow moderately during 2021–25.

Nonphthalate plasticizers are not based on phthalic acid, and have a different chemical structure and toxicological profile. These include terephthalates (the most common is dioctyl terephthalate [DOTP]), epoxy, aliphatics, trimellitates, polymeric, phosphates, and others. There has been a continuing shift toward the use of nonphthalates, mainly because of increasing regulations on certain phthalates resulting from human health concerns. Nonphthalates are able to address some of the health concerns facing phthalates while meeting performance requirements.

There have also been phthalates replaced with other types of phthalates to address these issues. For example, global DEHP regulations have led to a phaseout or more limited use of DEHP in some regions, having been replaced with other phthalates, as well as nonphthalates.

World consumption of other plasticizers (terephthalates, epoxy, aliphatics, trimellitates, polymeric, benzoates, and phosphates) is forecast to grow strongly during 2021–25. For example, terephthalates, trimellitates, and some aliphatics are forecast to grow relatively strongly as they replace phthalates. In some regions, however, growth rates for these plasticizers will be slightly less than in previous years due to the replacement of phthalates having already occurred.

Although overall economic performance will continue to be the best indicator of future demand for plasticizers, other issues that may affect the market during the next five years include the following:

- Availability and access to low-cost feedstocks
- Raw material and energy costs
- Environmental and health regulations affecting and/or limiting the type of plasticizers used, mainly phthalates

Phthalates continue to account for most global consumption at approximately 55%. There will be continued interest in the use and development of nonphthalate plasticizers.

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

IHS Markit's Chemical Economics Handbook – Plasticizers 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
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IHS Markit's Chemical Economics Handbook – Plasticizers 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

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