

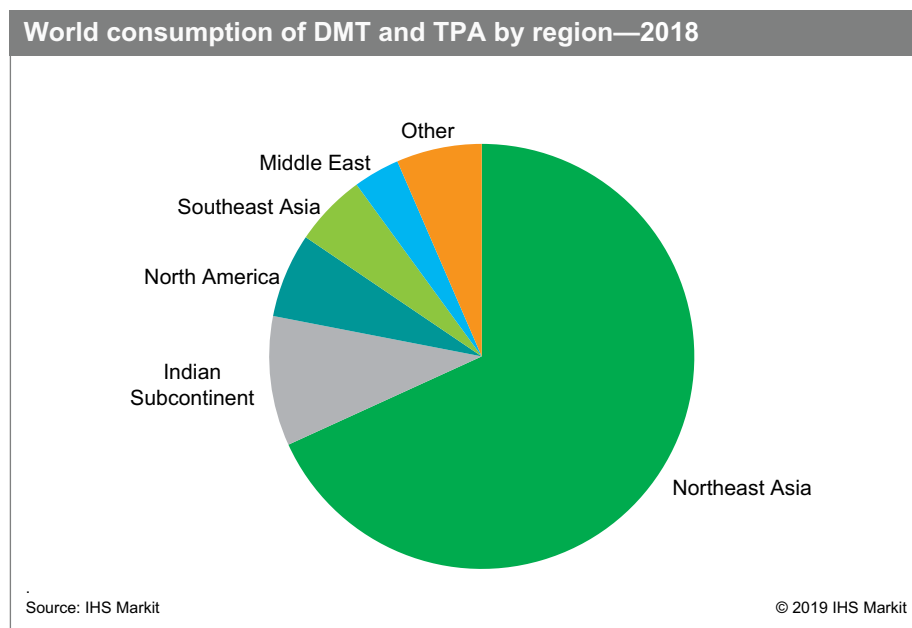
# Dimethylterephthalate (DMT) and Terephthalic Acid (TPA)

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## Abstract

Terephthalic acid (TPA) and dimethyl terephthalate (DMT) are consumed primarily to produce linear, saturated polyester resins, fibers, and films by reaction with glycols. Nearly all worldwide consumption of TPA and DMT is for the production of intermediate polyethylene terephthalate (PET) polymer. PET polymer, also referred to as reactor-grade polyester or PET melt-phase resin, is consumed primarily in the production of polyester fibers, polyester film, and solid-state (bottle-grade) resins. PET engineering resins are produced not only from melt-phase PET, but also from recycled postconsumer and postindustrial materials.

The following pie chart shows world consumption of TPA/DMT:



Polyester fibers ultimately account for the majority TPA/DMT consumption. Another one-third of consumption goes into the manufacture of PET solid-state resin for bottles and other packaging applications. The manufacture of polyester film, PBT, and other minor products such as cyclohexanedimethanol (CHDM), terephthaloyl chloride, and copolyester-ether elastomers accounts for the remainder of TPA/DMT consumption. Increasing demand for polyester fibers will drive future consumption of TPA/DMT. Its ample availability, advantaged cost position, and performance characteristics relative to competing materials have positioned polyester fibers to take the largest share of global man-made fiber consumption growth.

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Asia is the largest consumer of TPA/DMT, although consumption is almost entirely TPA (Japan, South Korea, and China consume a small amount of DMT). Asia will account for the vast majority of the world's TPA/DMT consumption growth in the next five years.

During 2008–18, consumption of TPA grew strongly at nearly 6% per year. For the next five years, global TPA consumption is expected slow only slightly. The DMT market, on the other hand, has been on a declining trend. During 2018–18, the DMT market contracted robustly; however, as most of the shift from DMT to TPA has already taken place in the industry, consumption of DMT is expected to continue decreasing, but at much slower rate.

There is interest in recycling PET, especially when virgin polymer prices are relatively high. The portion of PET that is recycled is high compared with most other resins. Most recycled PET is utilized as waste polymer for reprocessing, but processes have also been developed to chemically regenerate monomers or oligomers. The impetus for development of these processes is the assumption that chemical intermediates would find acceptability in a broader range of higher-value-added applications. Although there is significant capacity for regeneration, the amount of PET reprocessed is much smaller than the amount that is recycled as resin.

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