

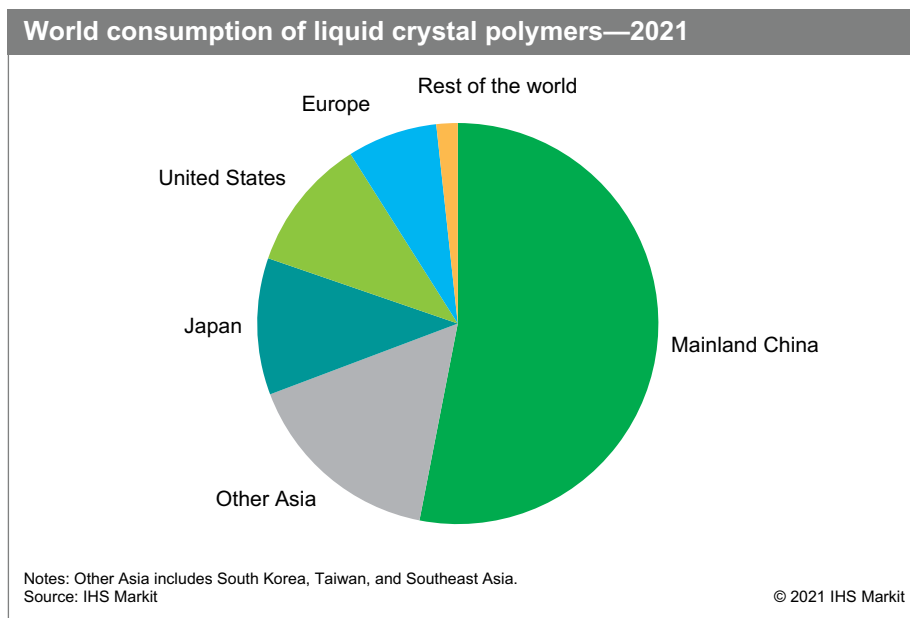
# Liquid Crystal Polymers

September 2021

## Abstract

Liquid crystal polymers (LCPs) are a highly versatile group of high-performance thermoplastics. The electronics/electrical industry accounts for more than 80% of global demand for LCPs. The major electronic/electrical markets for LCPs are in connectors for surface-mount technology (SMT connectors) and other electronic device components, such as motors, switches, bobbins, stators, chip carriers, coil forms, sockets, capacitor and protective housings, and printed circuit boards (PCBs). Growth is also attributed to the continued expansion of the electrical and electronics industry in electrical packaging. LCPs can also be used in electronic components for robots, satellites, high-density circuit boards for missiles and weaponry, digital cameras, copiers and printers, high-end headphones, and virtual reality headsets. The remaining demand for LCPs is for industrial and automotive applications, as well as uses in medical, aerospace, military, and cookware/bakeware.

The following chart presents world consumption of liquid crystal polymers:



LCPs compete with other high-performance thermoplastics and engineering resins, including polyphenylene sulfide (PPS), polyphthalamide (PPA), polycyclohexylenedimethylene terephthalate (PCT), and certain specialty nylons. LCPs can replace such materials as ceramics, metals, composites, and other plastics because of

## Contacts

IHS Markit Customer Care • [CustomerCare@ihsmarkit.com](mailto:CustomerCare@ihsmarkit.com)



their outstanding strength at very extreme temperatures and resistance to almost all chemicals, weathering, radiation, and burning. (On a pound-for-pound basis, LCPs are stronger than steel but only 15% as stiff.)

Asia dominates worldwide demand for LCPs; mainland China is the largest consumer, accounting for more than half of global consumption in 2021. Although the current global operating rate for LCPs is low, mainland China plans to expand LCP neat resin capacity by more than 10% per year during the forecast period. The global LCP market is expected to grow at an average annual rate of about 5% during 2021–26. Flexible printed circuit board applications, connectors and antennas in smartphones, and the shift to 5G networks are expected to be the main drivers for liquid crystal polymer consumption in the future.

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

**IHS Markit's Chemical Economics Handbook – *Liquid Crystal Polymers*** 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 – *Liquid Crystal Polymers*** has been compiled using primary interviews with key suppliers and organizations, and leading representatives from the industry in combination with IHS Markit's unparalleled access to upstream and downstream market intelligence and 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

# Contents

<b>Executive summary</b>	<b>5</b>
<b>Summary</b>	<b>6</b>
<b>Introduction</b>	<b>10</b>
<b>Manufacturing processes</b>	<b>12</b>
<b>Supply and demand by region</b>	<b>13</b>
United States	13
– Producing companies	13
– Production	13
– Consumption	14
– Electronics/electrical	15
– Transportation	16
– Healthcare	16
– Industrial and other	17
– Price	17
– Trade	18
Europe	20
– Producing companies	20
– Consumption	20
– Price	21
– Trade	22
Mainland China	22
– Producing companies	22
– Production	23
– Consumption	24
– Price	25
– Trade	25
Japan	25
– Producing companies	25
– Production	27
– Consumption	28
– Price	30
– Trade	31
– Imports	31
– Exports	31
Other Asia	31
– India	31
– South Korea	31
– Taiwan	32
– Southeast Asia	33
<b>Additional resources</b>	<b>35</b>
<b>Revisions</b>	<b>36</b>
<b>Data Workbook</b>	<b>37</b>
<b>Notice</b>	<b>38</b>

## IHS Markit Customer Care

CustomerCare@ihsmarkit.com

### **Asia and the Pacific Rim**

Japan: +81 3 6262 1887

Asia Pacific: +604 291 3600

**Europe, Middle East, and Africa: +44 (0) 1344 328 300**

**Americas: +1 800 447 2273**

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