

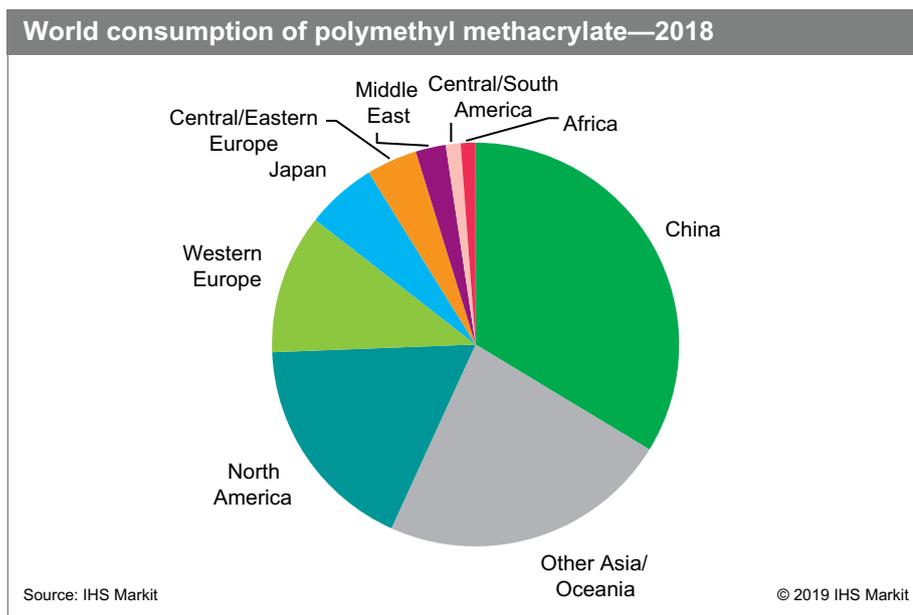
Polymethyl Methacrylate (PMMA)

15 May 2019

Abstract

Polymethyl methacrylate (PMMA) is a thermoplastic polymer material produced by the polymerization of methyl methacrylate (MMA). This report discusses the resins and plastics that are composed of over 50% polymethyl methacrylate. These polymers are available in the form of sheets, molding and extrusion products (pellets, beads, or powders), rods, tubes, and film. Not included are the solution and emulsion polymers that are derived from acrylates and methacrylates, as well as the copolymers and multipolymers that are less than 50% acrylic, and mineral-filled continuous-cast sheets.

The following pie chart shows world consumption of polymethyl methacrylate (PMMA):



China remains as the world's largest consumer of PMMA. However, consumption growth has slowed in recent years as the country's downstream industry continues to mature. The supply has also been significantly affected by the ban on plastic scrap imports, which resulted in a sharp decrease in production via recycled PMMA scrap. In China, PMMA use is dominant in construction (lighting fixtures, sanitaryware, and glazing) and automotive applications, while electrical/electronics use (liquid crystal displays, LED flat panel televisions, and notebooks) is the most significant market in most of the other countries in Asia.

PMMA supplies end-use markets that take advantage of its distinct properties, especially high optical clarity, light weight, UV stability, and impact resistance. PMMA extruded sheet is used in signs, merchandising displays, glazing, and lighting fixtures, while PMMA cast sheet (includes cell-cast and continuous-cast sheet) is consumed mainly for sanitaryware (spas,

Contacts

Koon-Ling Ring · Koon-Ling.ring@ihsmarkit.com
Maria deGuzman · Maria.deguzman@ihsmarkit.com

shower units, tubs, and sinks), signs, merchandising displays, glazing, and large aquariums. PMMA cast sheet and extruded sheet compete in many of the same markets, based on price and performance, as well as against other plastics, such as polycarbonate (PC) and polystyrene (PS) resins.

Other PMMA molding and extrusion products include medical, automotive, appliances, lighting fixtures and lenses, housewares, appliances, optical discs, and film. Together, these uses account for the largest share of PMMA consumption and are expected to have the highest growth during 2018–23.

As of early 2019, the top five world producers of PMMA represented more than half of the total world capacity. The largest multinational companies, in terms of PMMA capacity/production, were Mitsubishi Chemical, Evonik, and Altuglas (Arkema). Chi Mei Corporation and Sumitomo Chemical are more regional, but are also in the top five.

As the major end-use markets for PMMA are construction/remodeling and automotive/transportation, consumption of PMMA is largely influenced by general macroeconomic conditions. PMMA consumption will continue to follow the patterns of the leading world economies. During 2018–23, moderate world consumption growth is forecast for PMMA. Factors sustaining this growth include continued recovery in world construction markets, as well as a healthy automotive industry, on a global level. Motor vehicle production has shown gains in most regions, and will continue to improve during the forecast period. In addition, increased disposable income, increased use in construction/architecture and new LED lighting introductions, and use in electronics will push up demand. In the longer term, PMMA should offer more solutions for the solar industry and other electronic devices.

Contents

Executive summary	7
Summary	9
Introduction	13
PMMA properties and benefits	14
Manufacturing processes	15
Molding and extrusion products/materials	15
PMMA sheet (cast and extruded)	15
– Cast sheet	16
– Cell casting	16
– Continuous cast	16
– Extruded sheet	17
– Conventional extrusion	17
– Continuous process	17
Other PMMA products	18
PMMA recycling	18
Environmental issues	19
Supply and demand by region	20
United States	20
– Producing companies	20
– Salient statistics	23
– Consumption	24
– PMMA sheet	28
– PMMA extruded sheet	32
– PMMA cast sheet	32
– Molding products	36
– Medical	37
– Automotive	38
– Lighting fixtures and optical lenses	39
– Housewares and personal accessories	39
– Appliances	39
– Optical discs	40
– Film	40
– Other	40
– Price	40
– Trade	43
– Imports	43
– Exports	46
Canada	49
– Producing companies	49
– Salient statistics	49

– Consumption	50
– Trade	52
– Imports	52
– Exports	53
Mexico	54
– Producing companies	54
– Salient statistics	55
– Consumption	56
– Sheet	56
– Molding products	57
– Trade	58
– Imports	58
– Exports	59
Central and South America	60
– Producing companies	60
– Salient statistics	61
– Production	63
– Consumption	63
– Sheet	68
– Molding products	68
– Trade	69
– Imports	69
– Exports	69
Europe	70
– Salient statistics	70
– Consumption	71
Western Europe	73
– Producing companies	73
– Salient statistics	75
– Consumption	76
– Molding and extrusion	78
– Molded products	78
– Extruded sheet	78
– Cast sheet	79
– Price	80
– Trade	81
– Imports	81
– Exports	81
Central and Eastern Europe	82
– Producing companies	82
– Salient statistics	82
– Consumption	83
– Trade	85

– Imports	85
– Exports	85
Middle East	86
– Producing companies	86
– Salient statistics	87
– Consumption	88
– Trade	88
– Imports	88
– Exports	89
Africa	90
– Producing companies	90
– Salient statistics	90
– Consumption	91
– Trade	91
– Imports	92
– Exports	92
Japan	93
– Producing companies	93
– Salient statistics	94
– Consumption	96
– Molding products	99
– Automotive	99
– Electrical/electronic/industrial	99
– Lighting fixtures	100
– Other	100
– Cast and extruded sheet	100
– Signs and displays	101
– Electrical/electronic/industrial	101
– Glazing/construction	101
– Other	101
– Price	102
– Trade	103
China	104
– Producing companies	104
– Salient statistics	107
– Consumption	109
– Automotive	110
– Lighting fixtures	110
– Sanitaryware	110
– Glazing	111
– Displays	111
– Other	111
– Price	111

– Trade	112
Other Asia and Oceania	113
– Producing companies	113
– Salient statistics	114
– Consumption	116
– India	118
– Indonesia	119
– Malaysia	121
– Philippines	123
– Singapore	125
– South Korea	127
– Taiwan	129
– Thailand	131
– Oceania	133
– Rest of Asia	135
Additional resources	137
Revisions	139

IHS Markit Customer Care

CustomerCare@ihsmarkit.com

Americas: +1 800 IHS CARE (+1 800 447 2273)

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

Asia and the Pacific Rim: +604 291 3600

Disclaimer

The information contained in this report is confidential. Any unauthorized use, disclosure, reproduction, or dissemination, in full or in part, in any media or by any means, without the prior written permission of IHS Markit or any of its affiliates ("IHS Markit") is strictly prohibited. IHS Markit owns all IHS Markit logos and trade names contained in this report that are subject to license. Opinions, statements, estimates, and projections in this report (including other media) are solely those of the individual author(s) at the time of writing and do not necessarily reflect the opinions of IHS Markit. Neither IHS Markit nor the author(s) has any obligation to update this report in the event that any content, opinion, statement, estimate, or projection (collectively, "information") changes or subsequently becomes inaccurate. IHS Markit makes no warranty, expressed or implied, as to the accuracy, completeness, or timeliness of any information in this report, and shall not in any way be liable to any recipient for any inaccuracies or omissions. Without limiting the foregoing, IHS Markit shall have no liability whatsoever to any recipient, whether in contract, in tort (including negligence), under warranty, under statute or otherwise, in respect of any loss or damage suffered by any recipient as a result of or in connection with any information provided, or any course of action determined, by it or any third party, whether or not based on any information provided. The inclusion of a link to an external website by IHS Markit should not be understood to be an endorsement of that website or the site's owners (or their products/services). IHS Markit is not responsible for either the content or output of external websites. Copyright © 2019, IHS Markit®. All rights reserved and all intellectual property rights are retained by IHS Markit.

