

Biocides

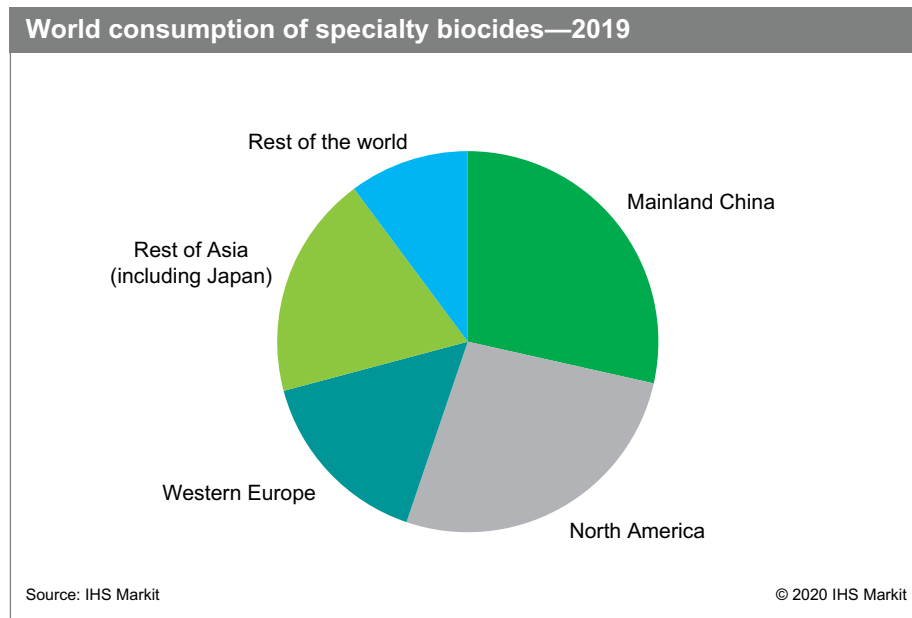
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Abstract

The specialty biocides described in this report include many different chemical types that are used in a variety of end-use areas. They are linked only by their common functionality in destroying or inhibiting the growth of a broad range of microorganisms. The specialty biocides—active ingredients, not formulated products—have been subdivided into eight product categories—organic acids and salts, active halogen compounds, quaternary ammonium compounds, organometallics, inorganics, organosulfur compounds, phenolics, and other biocides. Excluded are chemicals that are highly lethal to all living things (e.g., hydrogen cyanide), pharmaceuticals, chemicals used solely to control agricultural pests (i.e., pesticides), and commodity biocides (e.g., sodium hypochlorite and alcohols).

At the time of writing this report, the COVID-19 pandemic was impacting every sector of the global economy, with an expected mixed effect on the demand for the individual biocidal actives, depending on their ultimate use. The response to COVID-19 led to a sharp spike in the sanitizer and disinfectant use of biocides (and thus quaternary ammoniums and germicidal phenolics), while use in industries impacted by shelter-in-place mandates (e.g., construction, nonessential manufacturing sectors) declined.

The following pie chart shows world consumption of biocides on a volume basis:



Since 2016, mainland China has become the largest global market for biocides and will continue to be one of the fastest-growing markets; by 2025, mainland China will represent nearly one-third of the total global volume consumption. North America is the next-largest market for specialty biocides; the much higher consumption of biocides in North America,

Contacts

Maria deGuzman • Maria.deguzman@ihsmarkit.com

compared with the other developed regions of Western Europe and Japan, reflects the far higher number of swimming pools requiring biocides. Western Europe is the third-largest market for biocides; growth expectations for Western Europe are low, as it is a mature market and suffering from a heavy legislative burden, which makes new product development very difficult. Biocides consumption in India is still in early stages of development, with food preservation and water treatment being the only significant markets. Double-digit growth will continue through the forecast period, with India expected to represent nearly 10% of the global market by 2025.

An important consideration in the biocides market is the impact of government regulations. In the United States, Western Europe, mainland China, and Japan, as well as elsewhere in the world, these regulations require the registration of biocides, a process that includes lengthy and expensive toxicological tests that are designed to demonstrate whether the products can be used safely. Compliance with these regulations requires expertise and infrastructure, and this was a major reason why many large companies that first entered this business were often large manufacturers of pharmaceuticals or pesticides that already had similar biological testing capabilities and registration groups. Over time, newer regulations in most world areas have further restricted or banned the use of some biocides and stimulated the use of acceptable replacements with lower human toxicity.

Because of the increasing cost of complying with these regulations, very few new products have been introduced in the past five years. Since the Biocidal Products Directive first entered into force in mid-2000 in the European Union, about three-fourths of approximately 1,200 biocidal actives have disappeared from the market. Increasing costs have also led to further consolidation within the industry, as the smaller producers were forced to withdraw from the basic production of biocides because their lower sales volumes could not justify these added costs. This process is continuing, and several large companies may emerge with significant participation in a broad range of biocides. Only larger entities will be able to master the challenges of the varying regulations and customer demands in the different regions.

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

IHS Markit's Specialty Chemicals Update Program – *Biocides* is the comprehensive and trusted guide for anyone seeking information on this industry. This latest report details global and regional information, including



Industry structure,
operating characteristics
and regulatory
environment



Products, functions
and markets



Cost structure/
profitability



Technology changes
and emerging
substitution practices



Quantitative market
analysis and forecasts

Key benefits

IHS Markit's Specialty Chemicals Update Program – *Biocides* 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 the competitive environment and key players
- Assess key issues facing both suppliers and their end-use customers
- Understand industry integration strategies

- Keep abreast of industry structure changes, regulatory requirements, and other factors affecting profitability
- Identify new business opportunities and threats
- Follow important commercial developments
- Recognize trends and driving forces influencing specialty chemical markets

Contents

Executive summary	9
Summary	10
Introduction	16
Abbreviations	18
World overview of the biocides industry	21
Industry structure	21
– Key industry characteristics	21
– Suppliers	22
– Distributors	23
– Organizations	23
– Corporate activities	23
Company profiles	25
– Chemicrea Inc.	25
– DuPont Microbial Control	27
– LANXESS AG	28
– Lonza Group Ltd.	29
– Ueno Fine Chemicals Industry, Ltd.	30
Operating characteristics	31
– Research and development	31
– Manufacturing	32
– Marketing	33
– Cost structure and profitability	34
Government regulations	35
– United States	35
– European Union	37
– Regulations and directives	37
– Costs of compliance	41
– Registration procedure	41
– Mainland China	42
– Japan	43
Trends and opportunities	44
Critical factors for success	46
Products and functions	47
Organic acids and salts	47
Active halogen compounds	47
– Swimming pools and spas	48
– Machine dishwashing powders	49
– Cooling water treatment	50
– Bleaches	50
– Other	50

Quaternary ammonium compounds	50
Organometallics	51
Inorganics	52
Organosulfur compounds	53
Phenolics	53
Market by product type	55
North America	55
– Summary	55
– Organic acids and salts	56
– Consumption and markets	56
– Market participants	56
– Prices	57
– Active halogen compounds	58
– Consumption and markets	58
– Market participants	59
– Prices	60
– Quaternary ammonium compounds	60
– Consumption and markets	60
– Market participants	61
– Prices	62
– Organometallics	62
– Consumption and markets	62
– Market participants	63
– Prices	64
– Inorganics	64
– Consumption and markets	64
– Market participants	64
– Prices	65
– Organosulfur compounds	65
– Consumption and markets	65
– Market participants	66
– Prices	66
– Phenolics	67
– Consumption and markets	67
– Market participants	68
– Prices	68
– Other biocides	69
– Future trends and strategic issues	70
Central and South America	71
– Summary	71
– Consumption and markets	71
– Market participants	72
– Prices	73

Western Europe	73
– Summary	73
– Organic acids and salts	74
– Consumption and markets	75
– Market participants	77
– Prices	78
– Active halogen compounds	78
– Consumption and markets	79
– Market participants	79
– Prices	80
– Quaternary ammonium compounds	81
– Consumption and markets	81
– Market participants	82
– Prices	84
– Metalorganics and organometallics	84
– Consumption and markets	85
– Market participants	85
– Prices	86
– Inorganics	87
– Consumption and markets	87
– Market participants	88
– Prices	89
– Organosulfur compounds	90
– Consumption and markets	91
– Market participants	92
– Prices	95
– Phenolics	95
– Consumption and markets	96
– Market participants	97
– Prices	98
– Other biocides	99
– Consumption and markets	99
– Market participants	101
– Prices	103
– Future trends and strategic issues	104
Mainland China	106
– Summary	106
– Organic acids and salts	107
– Consumption and markets	107
– Market participants	110
– Prices	113
– Active halogen compounds	114
– Consumption and markets	114

– Market participants	116
– Prices	117
– Quaternary ammonium compounds	118
– Consumption and markets	118
– Market participants	120
– Prices	121
– Organometallics	122
– Consumption and markets	122
– Market participants	123
– Prices	125
– Inorganics	126
– Consumption and markets	126
– Market participants	127
– Prices	127
– Organosulfur compounds	128
– Consumption and markets	128
– Market participants	129
– Prices	131
– Phenolics	131
– Consumption and markets	131
– Market participants	133
– Prices	135
– Other biocides	135
– Market participants	137
– Prices	138
Japan	139
– Summary	139
– Organic acids and salts	139
– Consumption and markets	139
– Market participants	141
– Prices	141
– Active halogen compounds	141
– Consumption and markets	141
– Sanitizers and disinfectants	143
– Industrial water treatment	143
– Swimming pools	144
– Market participants	144
– Prices	144
– Quaternary ammonium compounds	144
– Consumption and markets	144
– Market participants	146
– Prices	147
– Organometallics	147

– Consumption and markets	147
– Market participants	149
– Prices	149
– Inorganics	149
– Consumption and markets	149
– Market participants	151
– Prices	152
– Organosulfur compounds	152
– Consumption and markets	152
– Market participants	153
– Prices	154
– Phenolics	154
– Consumption and markets	154
– Market participants	155
– Prices	155
– Other biocides	156
– Consumption and markets	156
– Biocides of natural origin	157
– Synthetics	158
– Major participants	159
– Prices	160
Other Asia	161
– South Korea	161
– Taiwan	161
– ASEAN countries	162
– Oceania	163
– India	163
End-use markets for biocides	165
North America	165
– Swimming pools and spas	166
– Wood preservatives (excluding paints)	166
– Food and feed preservatives	167
– Sanitizers and disinfectants	168
– Industrial water treatment	170
– Paints, coatings, and adhesives	173
– Personal care products	175
– Other	176
– Metalworking fluids	177
– Textiles	178
– Plastics	178
Western Europe	179
– Food and feed preservatives	179
– Swimming pools	180

– Personal care and pharmaceutical products	181
– Sanitizers and disinfectants	183
– Wood preservatives (excluding paints)	185
– Industrial water treatment	186
– Paints and coatings	188
– Other	189
– Metalworking fluids	189
– Leather	189
– Adhesives, sealants, and glues	190
– Textile sizes and finishes	191
Mainland China	191
– Food and feed preservatives	192
– Sanitizers and disinfectants	194
– Industrial water treatment	195
– Personal care products	196
– Swimming pools and spas	199
– Wood preservatives (excluding paints)	200
– Paints, coatings, and adhesives	201
– Other	202
Japan	202
– Sanitizers and disinfectants	203
– Food and feed preservatives	204
– Personal care products	205
– Industrial water treatment	206
– Swimming pools and spas	207
– Paints and coatings	208
– Wood preservatives	210
– Other	211
– Plastics	211
– Textiles	213
– Metalworking fluids	214
– Miscellaneous	214
South Korea	215
Taiwan	215
ASEAN countries	216
Oceania	217
India	217
Appendix	219
Revisions	223

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

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