Water Treatment in China

Industry Study with Forecasts for 2015 & 2020

Study #2920 | September 2012 | $5400 | 286 pages
Table of Contents

EXECUTIVE SUMMARY

MARKET ENVIRONMENT
General .................................................. 4
Economic Overview .................................... 5
Recent Economic Performance ...................... 6
Economic Outlook .................................... 8
Demographic Overview .............................. 11
Population ........................................... 12
Urbanization ......................................... 15
Personal Income Trends .............................. 15
Industrialization & Manufacturing Trends ....... 17
Gross Fixed Capital Formation Trends .......... 20
Currency Exchange Rates ........................... 21

Water Use Trends .................................... 23
Water Recycling & Conservation .................. 25
Wastewater Discharge .............................. 27
Desalination Overview ............................... 29

Environmental & Regulatory Considerations .. 31
The Twelfth Five-Year Plan ......................... 32
International Activity ............................... 35

MARKETS
General .................................................. 37
Industrial ............................................. 40
Pulp & Paper ......................................... 42
Chemicals ............................................ 45
Membranes ......................................... 48
Other .................................................. 49

Electric Power Generation ......................... 50
Chemicals ............................................ 52
Deionization ......................................... 53
Membranes ......................................... 54
Other .................................................. 54

Petroleum ............................................. 55
Chemicals ............................................ 57
Other .................................................. 59

Food & Beverage Processing ....................... 60
Chemicals ............................................ 62
Membranes ......................................... 64
Other .................................................. 65

Metal Processing ..................................... 66
Chemicals ............................................ 68
Membranes ......................................... 70
Other .................................................. 71

Electronics .......................................... 71
Membranes ......................................... 73
Other .................................................. 74

Textiles .............................................. 74
Chemicals ............................................ 76
Other .................................................. 78

Chemicals & Pharmaceuticals ..................... 79
Chemicals ............................................ 80
Membranes ......................................... 83
Other .................................................. 84
Other Industrial ...................................... 85
Membranes ......................................... 86
Chemicals ............................................ 87
Other .................................................. 89
Municipal ............................................. 90

Municipal Water Supply ............................. 92
Filtration ............................................ 95
Chemicals ............................................ 96
Membranes ......................................... 97
Other .................................................. 98
Municipal Wastewater ............................... 99
Chemicals ............................................ 102
Filtration ............................................ 103
Other .................................................. 103
Other Markets ....................................... 104
Residential .......................................... 105
Commercial .......................................... 108

PRODUCTS
General .................................................. 110
Chemicals ............................................ 114
Coagulants & Flocculants ........................... 117
Markets ............................................. 121
Suppliers ............................................ 122
Corrosion Inhibitors ................................ 122
Markets ............................................. 125
Suppliers ............................................ 126
Oxidizers & Biocides ................................ 127
Types .............................................. 129
Markets ............................................. 134
Suppliers ............................................ 135
pH Adjusters & Softeners .......................... 135
Markets ............................................. 139
Suppliers ............................................ 139
Other Chemicals .................................... 140
Defoamers ......................................... 140
Chelating Agents .................................... 143
Filtration ............................................ 145
Sand Filtration ...................................... 147
Cartridge Filtration ................................ 150
Other Filtration ..................................... 153
Membranes ......................................... 154
Types .............................................. 157
Reverse Osmosis .................................... 157
Microfiltration ...................................... 158
Ultrafiltration ...................................... 159
Other Membranes .................................. 160
Markets ............................................. 162
Suppliers ............................................ 164

Deionization ......................................... 164
Markets ............................................. 167
Suppliers ............................................ 168
Disinfection Equipment ............................. 169
Ultraviolet (UV) Equipment ....................... 171
Ozone Generating Equipment ..................... 173
Other Disinfection Equipment ..................... 175
Distillation .......................................... 176
Other Products ...................................... 179

INDUSTRY STRUCTURE
General .................................................. 182
Market Share ......................................... 185
Industry Composition & Restructuring .......... 189
Competitive Strategies .............................. 193
Marketing & Distribution .......................... 195
Cooperative Agreements ............................ 197

COMPANY PROFILES
Aquatech International .............................. 201
Ashland Incorporated ............................... 203
BASF SE ............................................. 206
Beijing Origin Water Technology .................. 209
Buckman Laboratories International ............ 210
Calgon Carbon ....................................... 212
Changzhou Kewei Fine Chemicals ............... 215
Chemtura Corporation .............................. 216
China National BlueStar Group .................... 218
Danaher Corporation ............................... 220
Dow Chemical ....................................... 223
Ebara Corporation ................................... 227
Ecolab Incorporated ................................. 229
General Electric ..................................... 233
GLV Incorporated .................................. 237
ITT Corporation ..................................... 240
Jianghai Environmental Protection .............. 241
Kemira Oyj .......................................... 243
Kurita Water Industries ............................. 246
LANXESS AG ........................................ 248
Lonza Group ......................................... 250
Wujin Water Quality Stabilizer Factory ........... 252
Nitto Denko ......................................... 254
Occidental Petroleum ............................... 257
Pall Corporation ..................................... 259
Severn Trent ......................................... 262
Siemens AG ......................................... 265
SNF SAS ............................................ 269
3M Company ........................................ 271
Veolia Environnement .............................. 274
Vontron Technology ................................ 277
Wujin Fine Chemical Factory ..................... 278
Xylem Incorporated ................................. 279
Other Companies Mentioned in the Study ...... 282

Click here to purchase online
Order now, click here!
List of Tables

EXECUTIVE SUMMARY
1 Summary Table ................................3

MARKET ENVIRONMENT
1 Gross Domestic Product of China .......... 11
2 Population of China by Age .............. 14
3 Personal Income & Expenditures in China .............................................. 17
4 Manufacturing Value Added in China .... 19
5 Gross Fixed Capital Formation in China . 21
6 Chinese Currency Exchange Rate, 2000-2010 .................................. 23
7 Water Use in China.......................... 25
8 Wastewater Discharge in China .......... 28

MARKETS
1 Water Treatment Markets in China ....... 39
2 Industrial Water Treatment Markets in China ........................................ 41
3 Pulp & Paper Market for Water Treatment Products in China .......... 45
4 Electric Power Generation Market for Water Treatment Products in China 52
5 Petroleum Market for Water Treatment Products in China .................. 57
6 Food & Beverage Processing Market for Water Treatment Products in China 62
7 Metal Processing Market for Water Treatment Products in China .......... 68
8 Electronics Market for Water Treatment Products in China ................ 73
9 Textile Market for Water Treatment Products in China ...................... 76
10 Chemical & Pharmaceutical Market for Water Treatment Products in China 80
11 Other Industrial Markets for Water Treatment Products in China .......... 86
12 Municipal Markets for Water Treatment Products in China ............ 92
13 Municipal Water Supply Market for Water Treatment Products in China 95
14 Municipal Wastewater Market for Water Treatment Products in China 102
15 Other Markets for Water Treatment Products in China ...................... 105
16 Residential Market for Water Treatment Products in China ............... 107
17 Commercial Market for Water Treatment Products in China .............. 109
18 Water Treatment Distillation Equipment Demand in China by Market ... 116
19 Other Water Treatment Equipment Demand in China by Market .......... 121

PRODUCTS
1 Water Treatment Product Demand in China by Type ...................... 113
2 Water Treatment Chemical Demand in China by Type ....................... 116
3 Water Treatment Coagulant & Flocculant Demand in China by Type & Market 121
4 Water Treatment Corrosion Inhibitor Demand in China by Type & Market 125
5 Water Treatment Oxidizer & Biocide Demand in China by Type & Market 128
6 Water Treatment pH Adjuster & Softener Demand in China by Type & Market 131
7 Other Water Treatment Chemical Demand in China by Type & Market ... 134
8 Water Treatment Filtration Product Demand in China by Type & Market 141
9 Water Treatment Sand Filtration Demand in China by Market ........... 147
10 Water Treatment Cartridge Filtration Demand in China by Market ...... 150
11 Other Water Treatment Filtration Demand in China by Market .......... 153
12 Water Treatment Membrane Demand in China by Type & Market ....... 154
13 Water Treatment Deionization Product Demand in China by Market ... 157
14 Water Treatment Disinfection Equipment Demand in China by Type & Market 167
15 Water Treatment UV Equipment Demand in China by Market ............ 170
16 Water Treatment Ozone Generating Equipment Demand in China by Market 173
17 Other Water Treatment Disinfection Equipment Demand in China by Market 176
18 Water Treatment Distillation Equipment Demand in China by Market ... 179
19 Other Water Treatment Equipment Demand in China by Market .......... 181

INDUSTRY STRUCTURE
1 Water Treatment Product Sales in China by Company, 2010 .......... 184
2 Selected Acquisitions & Divestitures ................................................. 191
3 Annual Water Treatment Trade Shows in China ......................... 196
4 Selected Cooperative Agreements ................................................. 198

List of Charts

MARKET ENVIRONMENT
1 Population of China by Age, 2000-2020 .......................... 14
2 Industrial Wastewater Discharge in China, 2010 .................... 29

MARKETS
1 Water Treatment Markets in China, 2000-2020 .................. 39
2 Industrial Water Treatment Markets in China, 2010 ............ 42

PRODUCTS
1 Water Treatment Product Demand in China by Type, 2010 .......... 114
2 Water Treatment Chemical Demand in China by Type, 2010 ......... 117

INDUSTRY STRUCTURE
1 Water Treatment Product Market Share in China, 2010 ............ 186

Order now, click here!
Demand for nonchemical water treatment in China will exhibit healthy growth through 2015, benefiting from advanced technologies and more stringent treatment standards.

**Demand to post double-digit gains through 2015**

The market for water treatment products in China is expected to grow more than 10 percent per year to 46.6 billion yuan in 2015, posting one of the fastest growth rates among national markets. Advances will be driven primarily by the continued strong growth in manufacturing, power generation, and other industries in China. Government efforts to increase access to fresh water and improve the poor condition of surface water sources, which supply most of the country’s water needs, will also spur demand for water treatment chemicals, equipment, and supplies.

After decades of rapid economic growth, the Chinese government’s lack of oversight on water treatment has led to significant environmental concerns, such as surface water pollution and regional water shortages. The Twelfth Five-Year Plan has set several goals for water conservation and the prevention of water pollution, that require massive spending on water supply, wastewater treatment, and recycling programs in significant water use segments, boosting demand for water treatment products.

**Industrial sector to remain dominant, exhibit robust growth**

Demand for water treatment products in the industrial sector is projected to post double-digit gains through 2015, accounting for more than half of the water treatment market in China. Despite comparatively slow growth in industrial water usage -- 2.4 percent per annum through 2015 -- demand for water treatment products in essentially every industrial market will be robust due to efforts to use water more efficiently and treat water more intensively. Greater emphasis on water recycling and waste reduction in industrial applications will intensify the need for more assertive treatment. Growth in the municipal water treatment market will be due in large part to the continued expansion of the nation’s water supply and wastewater treatment infrastructure. More municipal water infrastructure is needed to serve a growing urban population. Water supply and wastewater treatment facilities are still rare in rural areas.

**Nonchemical equipment demand to rise fastest**

Water treatment chemicals will remain the largest product category, with sales expected to grow 8.7 percent annually through 2015. However, benefiting from advanced technologies and more stringent treatment standards, demand for nonchemical equipment, such as filtration, membranes, and disinfection equipment, will experience healthier growth. Nonchemical disinfection equipment is expected to post the fastest growth, with demand projected to climb 20 percent per year through 2015.
MARKETS

Industrial

Demand for water treatment products in industrial markets in China is projected to increase at a compound annual growth rate of 11 percent per year to ¥24.8 billion in 2015. Advances will be driven by a greater emphasis placed on water recycling and waste reduction as part of a concerted national effort to use water more efficiently in China. Industrial output in China is expected to continue growing at an annual rate of 7 percent through the forecast period. During this time, water treatment activity in industrial markets will not only expand in conjunction with increases in industrial activity, but the water treatment industry will also match advances in technology and standards of more developed countries. These two developments -- expansion of treatment and modernization of treatment techniques -- will cause growth in the Chinese industrial water treatment market to be faster than anywhere else in the world.

In recent decades, the government’s efforts to increase industrial production and modernize the nation’s economy have been largely successful. However, this economic expansion came at considerable cost, including significant damage to the environment, as management of the water supply -- both in terms of volume of water use and quality of treatment for water supply and wastewater -- was deficient. Several water contamination accidents caused by industrial waste across the county have set off calls for better water safety in China. The most recent example is the cadmium pollution of Long River in Guangxi in January 2012.

Although the government has put forth a number of initiatives designed to improve the nation’s water supply -- including directives for treating wastewater more carefully and reining in wasteful and inefficient water usage -- there is still significant room for improvement on all counts. Troublesome source water quality still challenges many water users, and wastewater treatment rates are still far below those of more developed nations. Continued improvement in these key areas will lead to expansion of the Chinese industrial water treatment market.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper &amp; Board Production (mil metric tons)</td>
<td>35</td>
<td>60</td>
<td>97</td>
<td>129</td>
<td>163</td>
</tr>
<tr>
<td>¥ water treatment/metric ton paper</td>
<td>28.0</td>
<td>32.7</td>
<td>35.9</td>
<td>44.2</td>
<td>54.0</td>
</tr>
<tr>
<td>Water Treatment Product Demand</td>
<td>980</td>
<td>1960</td>
<td>3480</td>
<td>5700</td>
<td>8800</td>
</tr>
<tr>
<td>Chemicals:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coagulants &amp; Flocculants</td>
<td>266</td>
<td>498</td>
<td>840</td>
<td>1230</td>
<td>1715</td>
</tr>
<tr>
<td>Corrosion Inhibitors</td>
<td>240</td>
<td>474</td>
<td>815</td>
<td>1300</td>
<td>1855</td>
</tr>
<tr>
<td>Oxidizers &amp; Biocides</td>
<td>215</td>
<td>403</td>
<td>660</td>
<td>1000</td>
<td>1410</td>
</tr>
<tr>
<td>Other Chemicals</td>
<td>114</td>
<td>211</td>
<td>360</td>
<td>575</td>
<td>845</td>
</tr>
<tr>
<td>Membranes</td>
<td>54</td>
<td>162</td>
<td>363</td>
<td>755</td>
<td>1470</td>
</tr>
<tr>
<td>Filtration</td>
<td>33</td>
<td>93</td>
<td>217</td>
<td>445</td>
<td>865</td>
</tr>
<tr>
<td>Deionization</td>
<td>37</td>
<td>74</td>
<td>128</td>
<td>195</td>
<td>265</td>
</tr>
<tr>
<td>Other</td>
<td>21</td>
<td>45</td>
<td>97</td>
<td>200</td>
<td>375</td>
</tr>
<tr>
<td>% pulp &amp; paper</td>
<td>28.5</td>
<td>23.8</td>
<td>23.6</td>
<td>23.0</td>
<td>22.2</td>
</tr>
<tr>
<td>Industrial Water Treatment Demand</td>
<td>3440</td>
<td>8219</td>
<td>14720</td>
<td>24800</td>
<td>39700</td>
</tr>
</tbody>
</table>

TABLE III-3
PULP & PAPER MARKET FOR WATER TREATMENT PRODUCTS IN CHINA (million yuan)

CHART V-1
WATER TREATMENT PRODUCT MARKET SHARE IN CHINA
(28.5 billion yuan, 2010)
Wujin Fine Chemical Factory Company Limited
Hengshanqiao Town
Changzhou, Jiangsu 213119
China
86-519-8513-3288
http://www.wfcf.com

Annual Sales: ¥100 million[US$15 million](verified by company, 1/12)
Employment: 210 (verified by company, 1/12)

Key Products: oxygen scavengers, biocides, preservatives, copper corrosion inhibitors, and phosphonates

Wujin Fine Chemical Factory (WFCF) is a leading water treatment chemicals manufacturer in China. The privately held company operates a production site in Changzhou, China. In addition, the Company’s Uniphos Incorporated subsidiary markets the Company’s products in the US.

The Company is involved in the Chinese water treatment products industry through the manufacture of oxygen scavengers, biocides, preservatives, copper corrosion inhibitors, and phosphonates. Among WFCF’s oxygen scavengers are XF-701 and XF-702 types, both of which can be used to prevent corrosion in boiler feed systems. Biocides and preservatives made by the Company are based on a range of chemicals, including bronopol, glutaraldehyde, isothiazolinone, and 2,2-dibromo-3-nitri-lo-propionamide. A specific copper corrosion inhibitor is the XF-2100 tolytriazole sodium salt, which is suitable for use in industrial water treatment applications. Among WFCF’s phosphonates is the XF-210 model that can be utilized to control calcium carbonate scale. WFCF also manufactures phosphonates that are suitable for use as sequestering agents. A representative polymer from WFCF is the XF-322

"Demand for sand filtration systems for water treatment in China is projected to increase 8.8 percent annually to ¥6.2 billion in 2015. As the most established filtration type used for water treatment in China, sand filtration accounted for more than half of total filtration demand in China in 2010. Sand filtration will register slower growth than the overall average for filtration products, but growth will still be healthy, due to the expansion of the water supply and treatment infrastructure."

--Section IV, pg. 147-8

Copyright 2012 The Freedonia Group, Inc.
Corporate Use License

Now every decision maker in your organization can act on the key intelligence found in all Freedonia studies. For an additional $2600, companies receive unlimited use of an electronic version (PDF) of the study. Place it on your intranet, e-mail it to coworkers around the world, or print it as many times as you like.

Click here to learn more about the Corporate Use License

Order Form

Water Treatment in China ........................................ $5400

☐ Corporate Use License (add to study price) *

☐ Additional Print Copies @ $600 each *

Total (including selected option) $__________

☐ Enclosed is my check (5% discount) drawn against a US bank and mailed directly to The Freedonia Group. For wire transfers please contact our customer service department at info@freedoniagroup.com. Credit cards accepted.

☐ Bill my company ☐ American Express ☐ MasterCard ☐ Visa

MM     YY

Expiration Date

Signature ____________________________

☐ Individual Use License Agreement

The undersigned hereby represents that the above captioned study will be used by only __________ individual(s) who are employees of the company and that the study will not be loaded on a network for multiple users. In the event that usage of the study changes, the Company will promptly notify Freedonia of such change and will pay to Freedonia the appropriate fee based on Freedonia’s standard fee schedule then in effect. Note: Entire company corporate use license, add $2600; one additional user, add $600; two additional users, add $1200; three additional users, add $1800.

Signature ____________________________

☐ Corporate Use License Agreement

The above captioned study may be stored on the company’s intranet or shared directory, available to company employees. Copies of the study may be made, but the undersigned represents that distribution of the study will be limited to employees of the company.

Signature ____________________________

* Please check appropriate option and sign below to order an electronic version of the study.

Orders Outside of the US

Checks must be made payable in US funds, drawn against a US bank and mailed directly to The Freedonia Group. For wire transfers please contact our customer service department at info@freedoniagroup.com. Credit cards accepted.

Save 15%

If you order three (3) different titles at the same time, you can receive a 15% discount. If your order is accompanied by a check or wire transfer, you may take a 5% cash discount (discounts do not apply to Corporate Use Licenses).
### Other Studies

**World Water Disinfection Products**

World demand for water disinfection products will rise 5.5 percent annually to $7.7 billion in 2016. China and the Asia/Pacific and Africa/Mideast regions will be the fastest growing markets. A shift in the product mix from elemental chlorine towards higher value chemicals and advanced technologies will continue. This study analyzes the $5.9 billion world water disinfection product industry, with forecasts for 2016 and 2021 by product, market, world region and for 16 countries. The study also evaluates company market share and profiles industry participants.

#2992 ................ March 2013............... $6100

**World Water Infrastructure Equipment**

World demand for water infrastructure equipment will rise 6.5 percent per year to $101.7 billion in 2016. In less developed nations, gains will be prompted by expansion of water supply services. In most developed nations, gains will result from upgrades and repairs to aging sewer and water pipe networks. This study analyzes the $74.2 billion world water supply equipment industry, with forecasts for 2016 and 2021 by product, application, world region and for 22 major countries. The study also evaluates company market share and profiles industry competitors.

#2881 ................ May 2012............... $6100

**World Filters**

Global demand for filters is projected to rise 7.6 percent annually to $65.9 billion in 2015. China, India, Indonesia and other countries with large, developing industrial bases and nascent regulatory schemes will see the fastest growth. Manufacturing will be the fastest growing market, while transportation equipment remains the largest. This study analyzes the $45.6 billion world filter industry, with forecasts for 2015 and 2020 by product, market, world region and for 23 countries. The study also evaluates company market share and profiles industry players.

#2856 ................ March 2012............... $6300

**World Water Treatment Products**

World demand for water treatment products will rise 6.2 percent annually through 2015. China will remain by far the fastest growing major market. In the US, Japan and Western Europe, gains will favor advanced membrane systems, disinfection and desalination equipment, and industrial wastewater treatment chemicals. This study analyzes the $48.1 billion world water treatment product industry, with forecasts for 2015 and 2020 by product, market, world region and for 30 countries. The study also evaluates company market share and profiles industry players.

#2802 ................ September 2011........... $6400

**World Water Desalination**

World demand for water desalination products and services will rise 9.3 percent per year through 2015. The Africa/Mideast region will remain the dominant market, while the Asia/Pacific region grows the fastest. Reverse osmosis and other membrane-based technologies will continue to gain market share over thermal methods. This study analyzes the $8.6 billion world water desalination industry, with forecasts for 2015 and 2020 by technology, product, service, world region and for 17 countries. The study also evaluates company market share and profiles industry players.

#2782 ................ July 2011............... $5900

---

**About The Freedonia Group**

The Freedonia Group, Inc., is a leading international industry market research company that provides its clients with information and analysis needed to make informed strategic decisions for their businesses. Studies help clients identify business opportunities, develop strategies, make investment decisions and evaluate opportunities and threats. Freedonia research is designed to deliver unbiased views and reliable outlooks to assist clients in making the right decisions. Freedonia capitalizes on the resources of its proprietary in-house research team of experienced economists, professional analysts, industry researchers and editorial groups. Freedonia covers a diverse group of industries throughout the United States, the emerging China market, and other world markets. Industries analyzed by Freedonia include:

- Chemicals
- Plastics
- Life Sciences
- Packaging
- Building Materials
- Security & Electronics
- Industrial Components & Equipment
- Automotive & Transportation Equipment
- Household Goods
- Energy/Power Equipment

**Freedonia Custom Research**

Freedonia Custom Research delivers the same high quality, thorough and unbiased assessment of an industry or market as an industry study. Since the research initiative is based upon a company’s specific needs, companies harness Freedonia’s research capabilities and resources to answer unique questions. When you leverage the results of a Freedonia Custom Research engagement, you are able to obtain important answers to specific questions and issues associated with: mergers and acquisitions, new product launches/development, geographic expansion, entry into new markets, strategic business planning, and investment and funding decisions.

Freedonia Custom Research is ideal for companies seeking to make a strategic difference in the status quo and focus on future business growth. Working side by side with clients, Freedonia’s team is able to define a research project that is custom-tailored to answer specific questions and provide the basis from which a company can make informed business decisions.

---

The Freedonia Group, Inc. 767 Beta Drive • Cleveland, OH • 44143-2326 • USA • Web site: www.freedoniagroup.com
Tel US: 800.927.5900 or +1 440.684.9600 • Fax: +1 440.646.0484 • e-mail: info@freedoniagroup.com