PTA TECHNOLOGY

PTA (Purified Terephthalic Acid)
Terephthalic acid is the organic compound with formula C₆H₄(COOH)₂. This colorless solid is a commodity chemical, used principally as a precursor to the polyester PET, used to make clothing and plastic bottles. Approximately 60 million tons are produced annually in the world.

Introduction
At Mitsubishi Chemical Corporation (MCC), we have developed an advanced PTA technology with high yield and low solvent and energy consumption. Our PTA product grade is considered one of the best in the world. Mitsubishi Chemical has in total, nine (9) operating plants in Korea, Indonesia, India and China. Mitsubishi Chemical has two (2) licensed plants in Iran and Poland. Our largest operating PTA plant capacity is 800KTA and is located in India.

PTA Technology Licensing Record

- **China**: PTA 750 KT/Y
- **India**: PTA 1.25 MMT/Y
- **Iran**: PTA 350 KT/Y
- **Indonesia**: PTA 640 KT/Y
- **Japan**: PTA 250 KT/Y
- **Korea**: PTA 1.7 MMT/Y
- **Poland**: PTA 600 KT/Y

Group Companies
Licensees
# Technology Development History

<table>
<thead>
<tr>
<th>Country</th>
<th>Event</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>JAPAN-2</td>
<td>120KTA/Y</td>
<td></td>
<td>1965</td>
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<tr>
<td>JAPAN-3</td>
<td>MCC-PTA Start</td>
<td>1974</td>
<td>1985</td>
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</tr>
<tr>
<td>JAPAN-4</td>
<td>Developing the New Technology</td>
<td>1977</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>JAPAN-5</td>
<td>MCC QTA Technology</td>
<td>1987</td>
<td></td>
<td></td>
<td></td>
<td>2010</td>
</tr>
<tr>
<td>JAPAN-6</td>
<td>Development of 2nd generation Technology</td>
<td>1990</td>
<td></td>
<td></td>
<td></td>
<td>2002</td>
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<tr>
<td>KOREA-1</td>
<td>Start Globalization of MCC's Technology</td>
<td>1990</td>
<td></td>
<td></td>
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<td>KOREA-2</td>
<td></td>
<td></td>
<td>1995</td>
<td></td>
<td></td>
<td>2004</td>
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<tr>
<td>KOREA-3</td>
<td>Capacity Up by adopting 2nd generation Technology</td>
<td>1997</td>
<td></td>
<td></td>
<td></td>
<td>2003</td>
</tr>
<tr>
<td>KOREA-4</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>INDONESIA-1</td>
<td>MCC PTA Mother Plant as World Scale</td>
<td>1993</td>
<td></td>
<td></td>
<td></td>
<td>1996</td>
</tr>
<tr>
<td>INDONESIA-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
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<td>INDIA-1</td>
<td>Introducing 3rd generation Technology</td>
<td>2000</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>INDIA-2</td>
<td>Introducing 5th generation Technology</td>
<td></td>
<td></td>
<td></td>
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<td>2009</td>
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<tr>
<td>IRAN</td>
<td>Licensing MCC PTA Technology</td>
<td>2004</td>
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<td>CHINA</td>
<td>Introducing the 4th generation Technology</td>
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<td>2007</td>
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<td>POLAND</td>
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Technology Feature

Mitsubishi Chemical PTA technology features are as follows

(1) Process Features

**Process Technology**

(1) World Class Scale -- Up to 1,200KTA
(2) Highly Integrated Process
(3) Sophisticated Reaction Technology
  - High yield of PTA from Para-xylene
  - Excellent Acetic acid and Catalyst consumption
  - Long PTA Catalyst Life (2 years more)
(4) High Performance Catalyst Recovery Unit
(5) Excellent Energy Saving
(6) Environment Friendly Process

**Operation**

(1) Reliable and Stable Operation
   - Know-how of Half Century Operation
(2) Excellent and Stable Product Quality

(2) Product Quality Features

**Stable and Excellent PTA Quality**

(1) Excellent Quality for All PTA Application
(2) Excellent Transparency, 4CBA, Metal content, p- TA, Powder b and All Other Quality Index

**Foreign Matter (FM) Control in PTA**

(1) In-process PTA Filter and other know-how
(2) Lower FM is one of Key Factor for Long Polymer Filter-life & High Performance in PET Production
  1) High speed Spinning Operation; >6000m/min.
  2) Extra fine application; <0.1d/f)
  3) Cleanness of PET Resin for Bottle Application
Process Block Flow Diagram

Main Oxidation Reaction

\[ \text{CH}_7\text{CH}_3 + 3\text{O}_2 \rightarrow \text{HOOC-} \text{COOH} + 2\text{H}_2\text{O} \]

\[ \text{HOOC-} \text{CHO} \rightarrow \text{HOOC-} \text{CH}_3 + \text{H}_2\text{O} \]

\text{4-Carboxyl Benzaldehyde(4CBA)}

For further details, please visit our homepage at:
http://www.mcc-license.com/
or mail us at:
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