What’s CX?

CX is the HDPE manufacturing technology which combines ideal process & catalyst and leads to excellent quality.

CX process provides resins that have excellent mechanical properties maintaining outstanding process-ability. Licensed throughout the world, CX process and its products are greatly appreciated by top companies everywhere.
CX process can provide resins to suit a wide variety of applications:

**Film**

**Injection**

**Pipe**

**Blow**

**Other extrusion**
CX products cover all important applications of HDPE and MDPE
**CX process flow scheme**

- **Ethylene**
- **Comonomer**
- **Hydrogen**

- **Catalyst**
- **Solvent**

- **1st reactor**
- **2nd reactor**

- **Stabilizer**
- **Dryer**
- **Pelletizer**

- **Low polymer**

- **Product**
Benefits

A. Quality
- Realize ideal HDPE polymer structure.
- Excellent property with flowability.

B. Easy & Simple operation
- Sophisticated by more than 50 years operation experience.
- The reactors can be operated without cleaning for several years.
- Ensure safety in emergency and easy restart.
- Simple catalyst preparation

C. Environment-friendly
- No VOCs (Volatile Organic Compounds) to atmosphere

D. License Experience
- 40 years licensing experience
- Recorded 48 CX plants & over 8 million tons/year.
Bimodal slurry phase process leads to high quality HMW-HDPE

Concept of process for excellent bimodal HDPE

A: Quality

Amount of polymer

High processability

Excellent mechanical strength

Further mechanical strength

Number of short chain branches

Ethylene
Catalyst
Solvent

Comonomer
Hydrogen

1st reactor

2nd reactor
B. Easy & Simple operation

Catalyst for CX process; 
- One catalyst for all HDPE 
- High activity & good morphology

First HDPE commercialization in Japan (Mitsui; 1958)

MgCl₂/TiCl₄/Et₃Al (Mitsui; 1968)

TiCl₄/ Et₂AlCl (Ziegler; 1953)
Emission of Volatile Organic Compounds (VOC) is one of the most important environment problem. In CX process, VOC from the plant can be sent to flare, there is no emission of VOC into the atmosphere.
48 CX plants around the world

CX process obtains about 20% of HDPE share in the world. 48 CX plants have been in operation.
CX license activity started from 1976 and it is sophisticated through about 40 years experience. The maximum plant size has reached to 500 KTA.
CX licensee & licenser conference (CXLC)

Sharing information of CX worldwide and CXLC has high reputation

(Companies)

1. CXLC1999 13
2. CXLC2001 9
3. CXLC2003 11
4. CXLC2005 14
5. CXLC2007 13
6. CXLC2010 12
7. CXLC2013 12
8. CXLC2015 11
9. CXLC2017 12
10. CXLC2019 7

MCI has conducted a “CX Licensee and Licensor Conference” every other year since 1999 to share information on plant operation improvements, troubleshooting activities, and product information, etc.
**Summary**

*MCI’s HDPE technology brings huge benefits to all your projects*

- Process
  - Sophisticated bimodal slurry process
- Catalysts
  - High performance catalysts
- Products
  - Value-added grades
新たな顧客価値を創造し
事業活動を通じて

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