

# *Hypol-II for Licensed PP Technology*



License Division  
Mitsui Chemicals Inc.

HYPOL™ is a trademark of Mitsui Chemicals



***What is Hypol-II ?***

***Mitsui Chemicals creates***  
***Hypol-II*** technology for  
***PP Manufacturing***  
***which realizes***  
***Excellent Properties*** by utilizing  
***state-of-the-art Reaction System***  
***with Innovative Catalyst***

## Injection Molding



## Film



## Fiber, Tape



## Blow Molding



# Hypol-II Flow Scheme

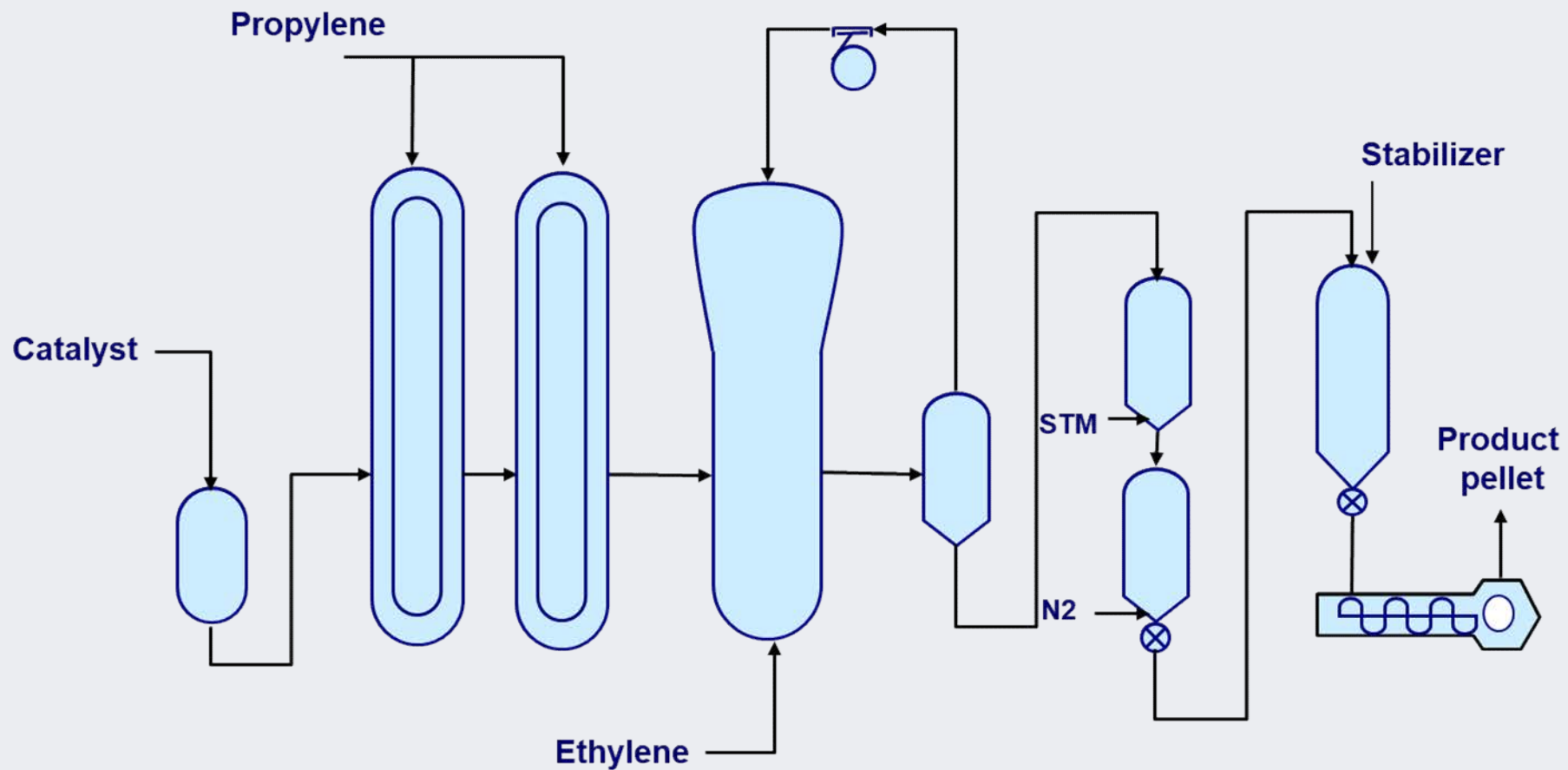
Catalyst preparation

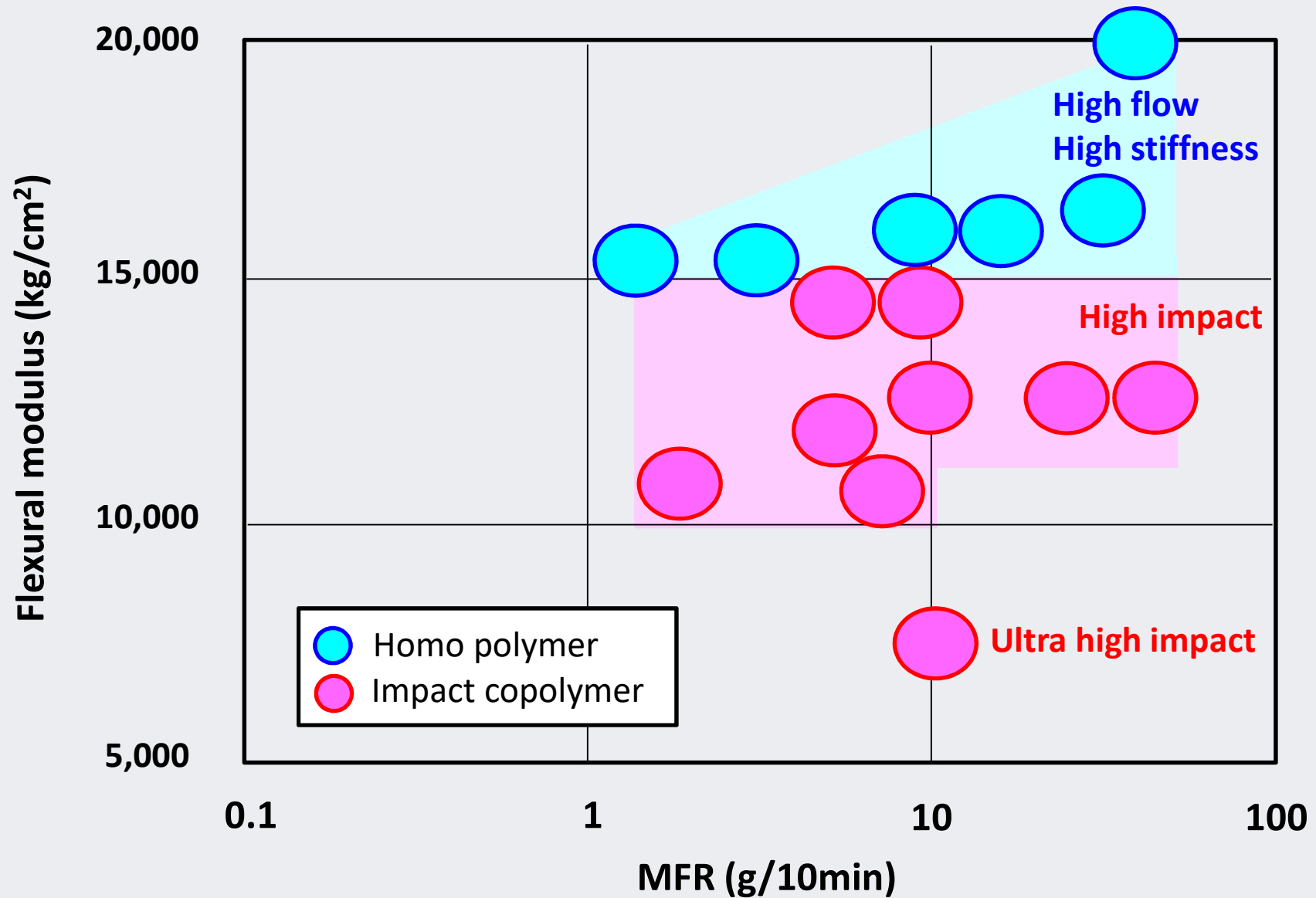
Homo-polymerization

Copolymerization

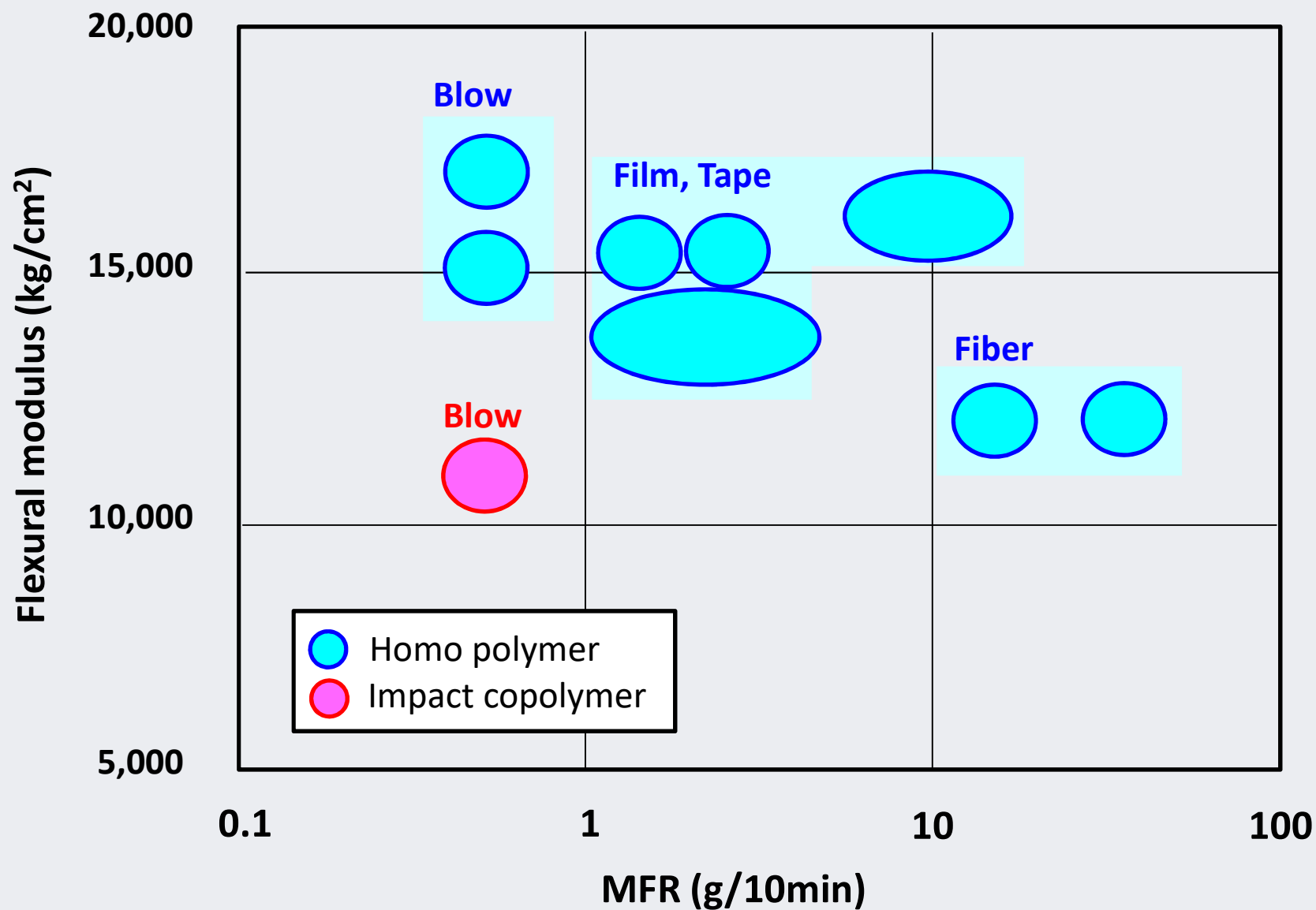
Drying

Finishing





# Products map - Film, Tape, Fiber, Blow molding grades -





***Why is Hypol-II the best?***



### A. PP License experience

- 34 years licensing experience with 25 plants realization

### B. State-of-the-art reaction system

- High efficiency and Stable reactor
- High copolymer content
- Innovative catalysts

### C. Excellent product quality

- Impact copolymer with excellent impact resistance
- Various kinds of Homopolymer

### D. Constant technical support

- Support for plant expansion or modification
- Update information such technology as new grades or catalysts

**A. PP License experience**

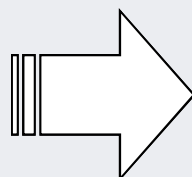


**25 plants around  
the world**

## B. State-of-the-art reaction system

### Homopolymerization

**Bulk Phase Reactor  
Multi Stage**



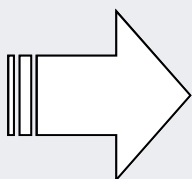
**High Efficiency**

**Better Uniformity**

**Easy MWD Control**

### Copolymerization

**Gas Phase Reactor**



**High Copolymer Content**

**Stable Operability**

**Easy Composition Control**

**Unique design of the Mitsui Gas Phase Reactor ensures stable, long-term operation without fouling or frequent shutdowns for cleaning.**

## B. State-of-the-art reaction system



**Granule Type**

5th, 6th  
Generation

4th  
Generation

Granule Type	Spherical Type
<b>MK, MH, GH series</b> <b>RK, RH series</b>	Under development
<b>TK series</b>	<b>TK series</b>

3rd Generation : 1975

2nd Generation (Solvay)

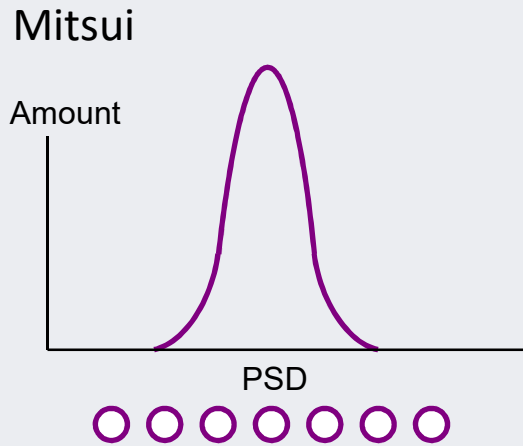
1st Generation : 1954  
(Natta)



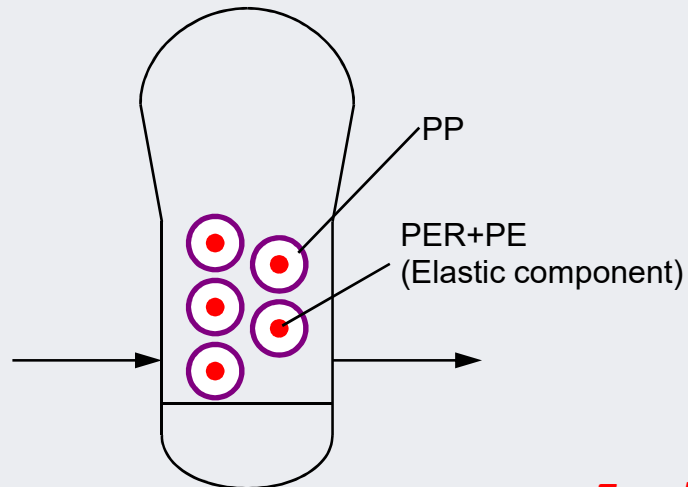
**Spherical Type**

# Impact copolymer with excellent impact resistance

## Homopolymer



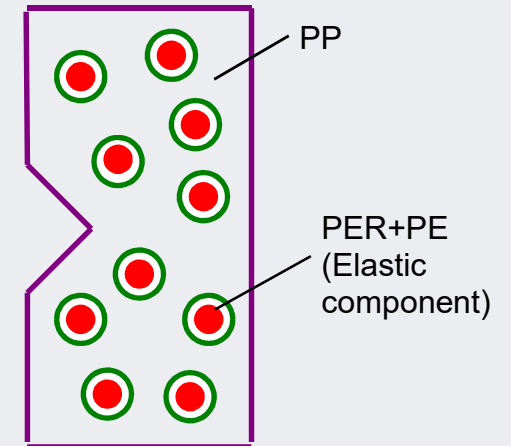
## Copolymer



**Homogenous PER Dispersion**

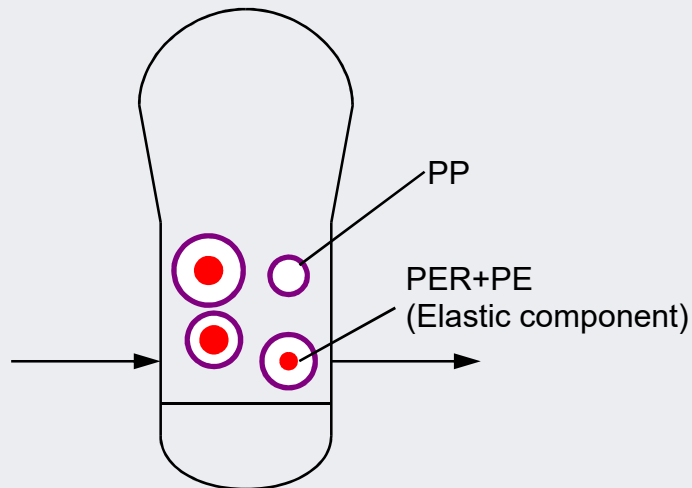
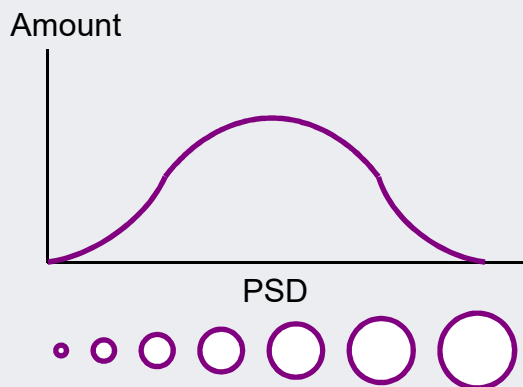
## C. Excellent product quality

### Mould



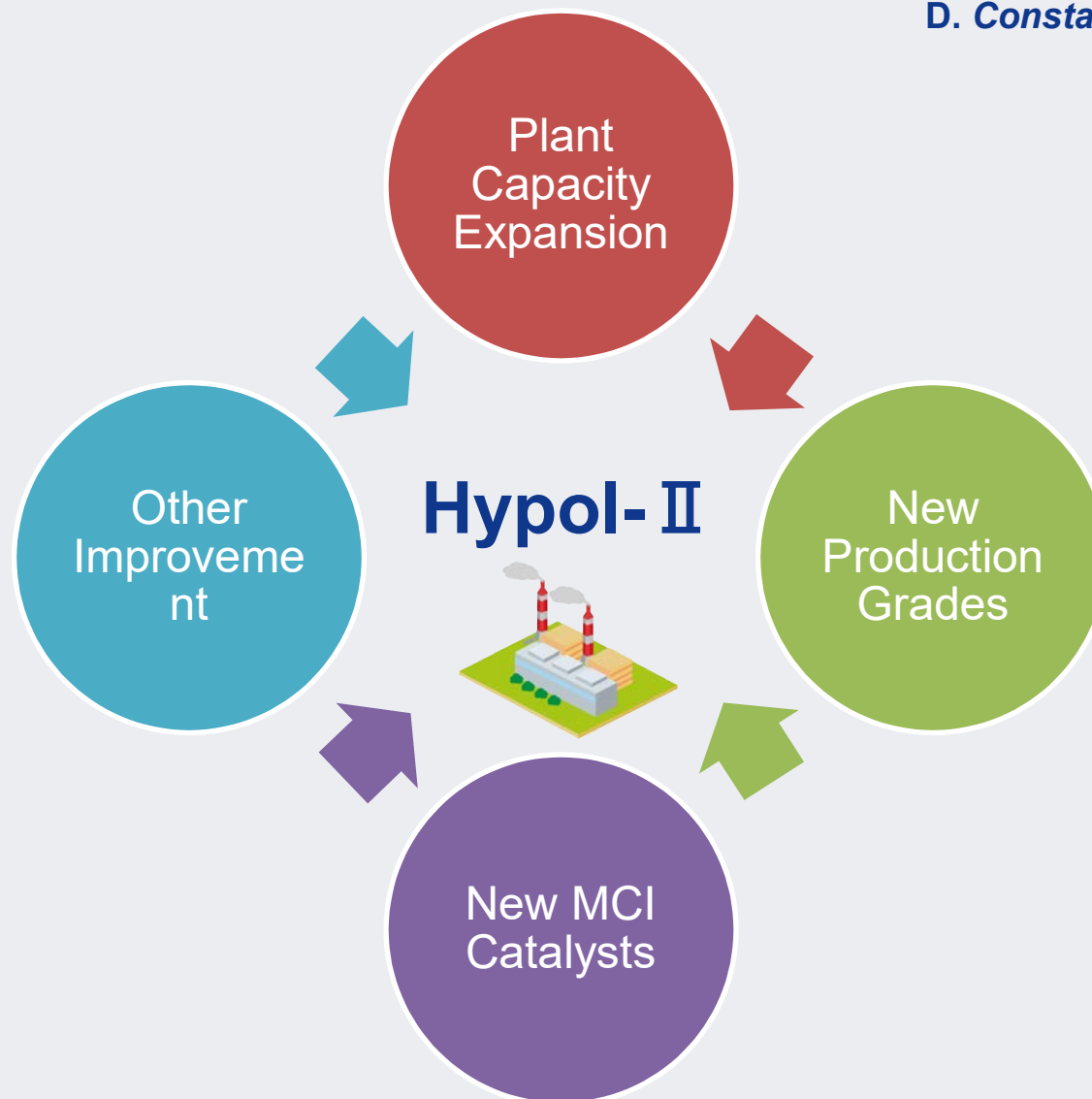
**Excellent Impact Resistance**

## Conventional



**Less Impact Resistance**

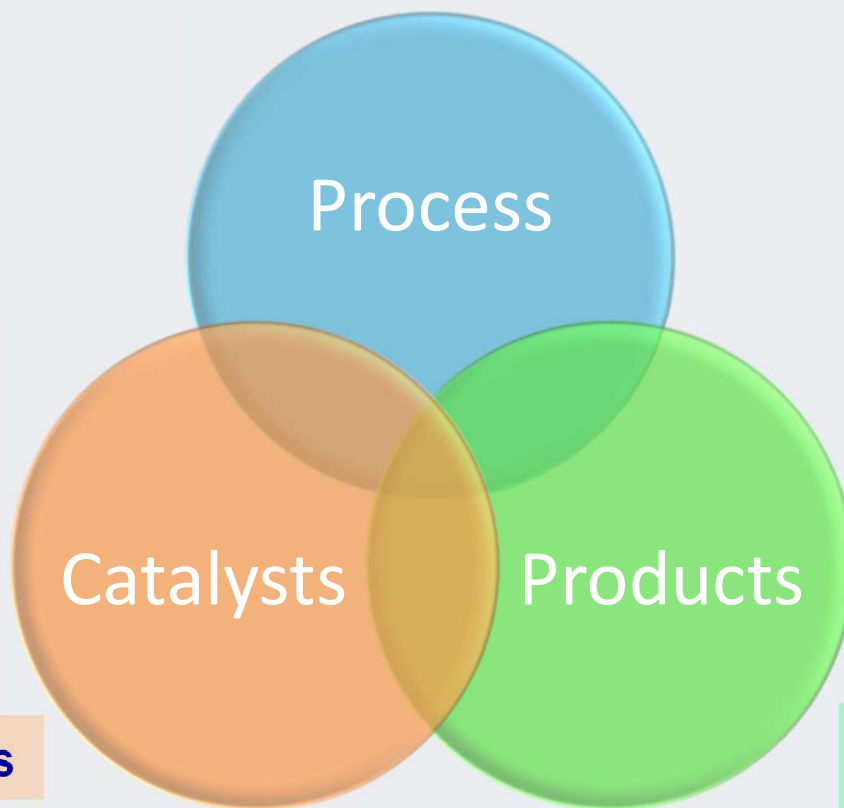
**D. Constant technical support**



 ***Summary***

***MCI's PP technology brings huge benefits to your projects***

**State-of-the-art reaction system**



**Innovative Catalysts**

**Excellent product quality**





**Mitsui Chemicals**

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The detailed information is provided after conclusion of secrecy agreement.