



MEG(Catalytic MEG process) Technology

MEG (Mono Ethylene Glycol) (Application)

MEG is a vital ingredient for polyester fibers, film and PET packaging – all of which are seeing burgeoning demand. Conventional thermal processes co-produce about 10% diethylene and heavier glycols.

Introduction (Feature and History)

MCC has developed a cutting-edge Catalytic MEG process that achieves a conversion efficiency of over 99% compared to the 90% of conversion efficiency of the conventional processes. This technology is combined with Shell EO process which is named as OMEGA process. Mitsubishi Chemical has granted the sub-license right of this MEG process to Shell Chemical and this combined technology is licensed by Shell Chemical to all over the world. Already three world scale commercial plants have been constructed and have been operating smoothly in Korea, in Saudi Arabia and in Singapore. The capacity of each plant is 400kt/y, 600kt/y and 750kt/y respectively. MCC supplies OMEGA catalyst.

	MCC Process	Conventional process
MEG Selectivity	More than 99%	90%
Water/EO ratio	1 mol/mol	Approx 22 mol/mol

Process Feature

Features of Catalytic MEG process are as follows;

(1) Low water/EO ratio

The ratio is almost equal to stoichiometry. This feature makes it possible to simplify the purification section, and saves a lot of energy consumption and construction cost. It is a simple, stable and energy efficient process.

(2) High Selectivity

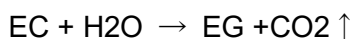
With the high selectivity, only small purification unit is required and substantially no facility for handling by-product is required. Further it makes the plant operation very stable and energy efficient.

Chemistry (Process Description)

1st step: Carbonation

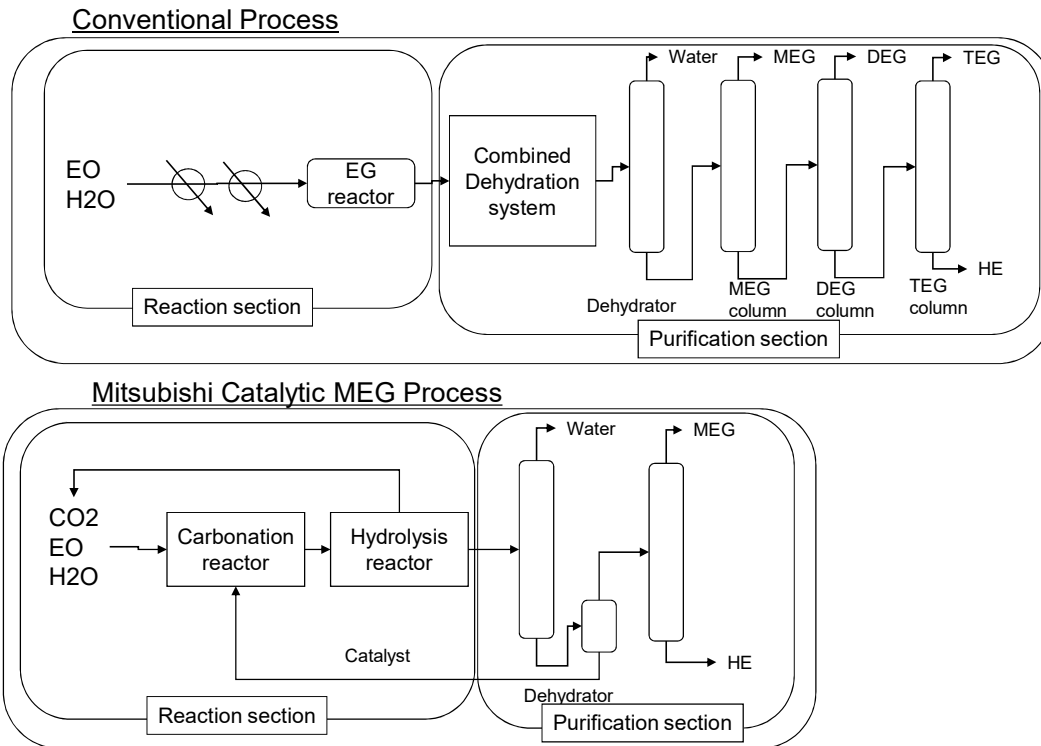


2nd step: Hydrolysis





Simplified Block Flow



World MEG Capacity

In 2012, the world MEG production capacity is 28,870,000 ton/year, actual production is 24,885,000 ton/year and demand growth rate is around 6%/Year.

For further details, please visit our homepage at:

<https://www.m-chemical.co.jp/en/petrochem-license/>