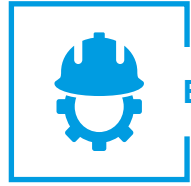




TECHNOLOGY LICENSING

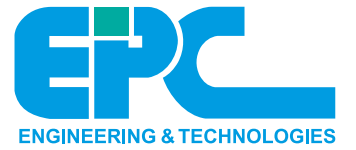


ENGINEERING SERVICES



PLANT CONSTRUCTION

IDEAS INSIDE <sup>EPC</sup>



## CHDM Hydrogenation Technology

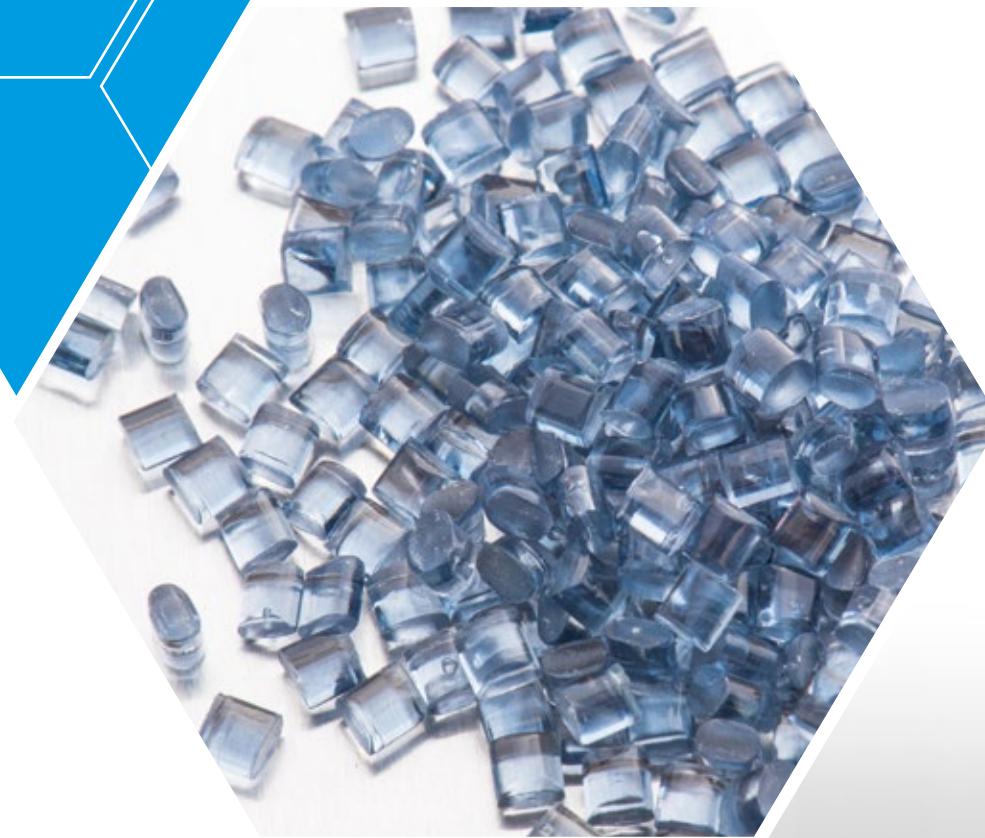
High-quality comonomers for production of  
PETG, PCT, PCTG, PCTA

### CONTACT

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### Our Technology for Turnkey CHDM Hydrogenation Plants

EPC Group is a specialist in process engineering and industrial plant construction with a successful track record of having completed over 1,000 projects in more than 40 countries.

EPC is offering its CHDM Hydrogenation Technology for the production of high-quality CHDM. This highly efficient and flexible continuous hydrogenation process ensures the economically feasible production of CHDM.



EPC Group is certified per DIN EN ISO 9001

IDEAS INSIDE <sup>EPC</sup>



## CHDM- Hydrogenation Plants

### Combination of Flexible Plant Design and Formulation Know-how

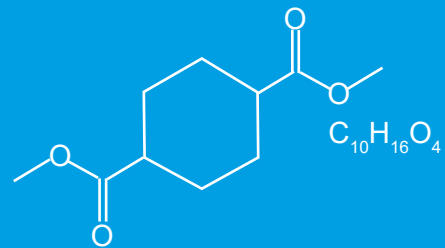
CHDM is used as a co-monomer for the production of various polymers e.g. PETG, PCT, PCTG and PCTA.

As a comonomer in polyester production it enhances:

- The reactivity in polyester compounds
- The hydrolytic stability, plasticity
- Gloss, transparency and the processability of polyester

Added as a comonomer for the production of glycol-modified PET (PETG), the polymer offers:

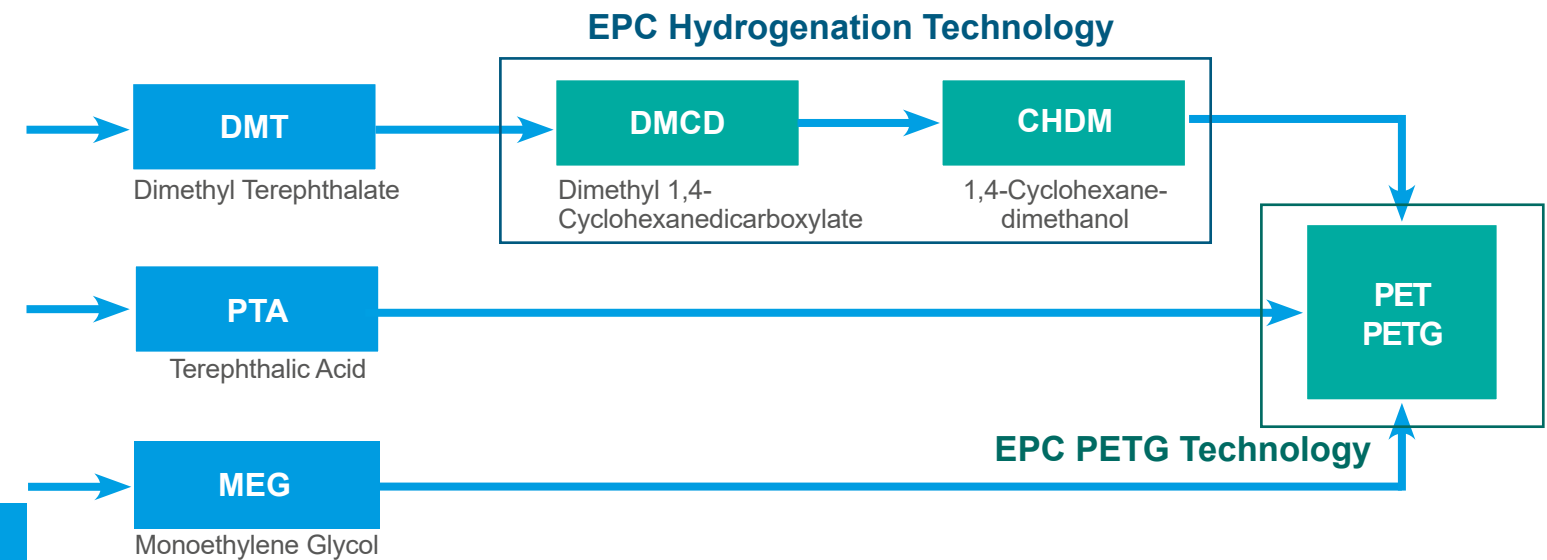
- Excellent melt strength
- Easy processing combined with optimal mechanical properties
- Inability to develop crystalline haze → high transparency
- No yellowing in molding due to high thermal stability
- Superior chemical resistance



The intermediate **DMCD** (Dimethyl 1,4-Cyclohexanedicarboxylate) can also be sold on the market.

Additionally it enhances thermal stability, corrosion resistance of the resin in chemical intermediates, polyester resins for coatings and unsaturated polyester applications.

## CHDM in the Production of PETG:



### Services offered by EPC for CHDM Hydrogenation Technology:

- ✓ Technology Licensing
- ✓ Extended Basic Engineering
- ✓ Key Equipment Delivery
- ✓ Supervision of Installation
- ✓ Supervision of Commissioning & Start-Up
- ✓ Recipe Development & Product Optimization

### EPC's engineering work provides the most efficient concept that integrates:

- ✓ High production flexibility
- ✓ Consistent product quality at the highest level
- ✓ Capacity range from 50 % to 100 % of rated capacity ensures high flexibility for the market
- ✓ Optimized catalyst system
- ✓ Compact plant design including high automation grade
- ✓ Efficient energy and material consumption
- ✓ Independent cooling systems for accurate control of reaction temperature
- ✓ Environmentally friendly design, compliant with current and future EU standards

### Advantages of EPC's CHDM Hydrogenation Technology:

- ✓ High quality CHDM guaranteed
- ✓ Optimal cis/trans ratio isomers
- ✓ Recycling of process methanol available
- ✓ Low cooling water consumption
- ✓ Reduced process conditions compared to existing technologies
- ✓ Optimized ratio of CHDM / Catalyst
- ✓ High efficiency in energy consumption
- ✓ Easily available base catalyst
- ✓ Sophisticated process control
- ✓ No restrictive license terms



- Polymers & Fibers
- Chemistry & Specialty Chemistry
- Renewable Energies
- Biotechnologies
- Engineering Services & Infrastructure
- Pharmaceuticals & Fine Chemistry



- Cryogenic Systems
- Systems for Compression & Liquefaction of Gases
- Small Scale LNG Systems
- Air Separation Systems
- CO<sub>2</sub> Technologies
- Special Applications for Technical Gases



- Construction Engineering
- Infrastructure
- Building & Civil Engineering
- Project Management
- Technical Building Equipment



- Building Automation
- E/I&C Technology
- Electrical Engineering & Telecommunications
- Ventilation & Air-Conditioning Systems
- Heating & Sanitary Systems



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