

IDEAS INSIDE



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TECHNOLOGY PROVIDER:

EPC Engineering Consulting GmbH is your one-stop-shop for polycarbonate technology.

- Process Technology Provider
- Extended Basic Engineering
- Key Equipment Delivery
- Supervision of Installation
- Supervision of Pre-Commissioning
- Supervision of Plant Start-up
- Supervision of Commissioning
- Recipe Development & Product Optimization

CONTACT PERSON

For general questions relating Polycarbonate Technology

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The EPC Group is certified according to DIN EN ISO 9001:2008

EPC Group - German Polycarbonate Technology Provider.

EPC Group specializes in international process engineering and plant construction projects. EPC offers a turnkey solution for the realization of polycarbonate production plants. The process utilizes DPC and BPA as key feedstocks to produce phosgene-free polycarbonate.

In addition to the design of polycarbonate polycondensation plants, EPC ensures smooth integration with upstream technology providers to achieve an optimal plant design that is both: Economical and environmentally feasible.



Polycarbonate production plants. EPC: Your german polycarbonate technology provider.

Polycarbonate and its modified copolymers are particular groups of thermoplastic polymers. Due to their interesting physical properties such as light weight, temperature resistance and impact resistance as well as outstanding optical properties polycarbonates are widely used for high-tech products.

Melt polycondensation

EPC offers the process technology for producing polycarbonate resin using the non-phosgene melt process and bisphenol A (BPA) and diphenylcarbonate (DPC) as raw materials.

Process description:

BPA and DPC are fed into the preparation tank where they are thoroughly molten. In order to achieve the high-purity monomer required for the production of high-quality polycarbonate

suitable purification steps such as distillation, filtration and melt crystallization are considered.

The pre-heated raw materials are fed in liquid form in a defined molar ratio into the transesterification reactor where they are mixed with catalysts and heated up to the desired transesterification temperature. During the formation of polymer chains phenol begins to split-off. After the transesterification has been finished the short polymer chains, the so-called oligomers, are discharged and fed into the prepolycondensation I reactor for the next reaction step. Using higher temperatures and a lower vacuum, molecules of mid-size chain length are built-up.

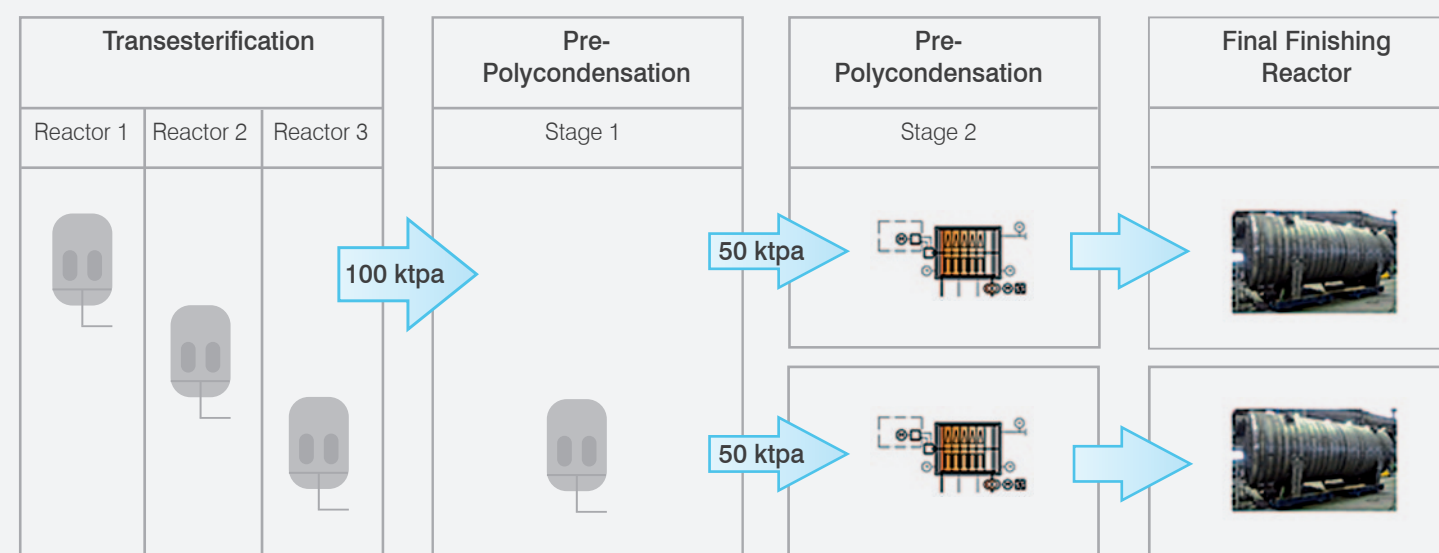
The product is then transferred to the prepolycondensation II reactor for further chain growth and subsequently to the final polycondensation reactor. The final polycondensation reactor is used to achieve the desired polymer chain length and hence the desired properties of the Polycarbonate. Both the prepolycondensation II stage and final reactor are equipped with a horizontal disc-ring agitators that provide a high surface area to ensure easy mass transfer and chemical reaction.

Compounding:

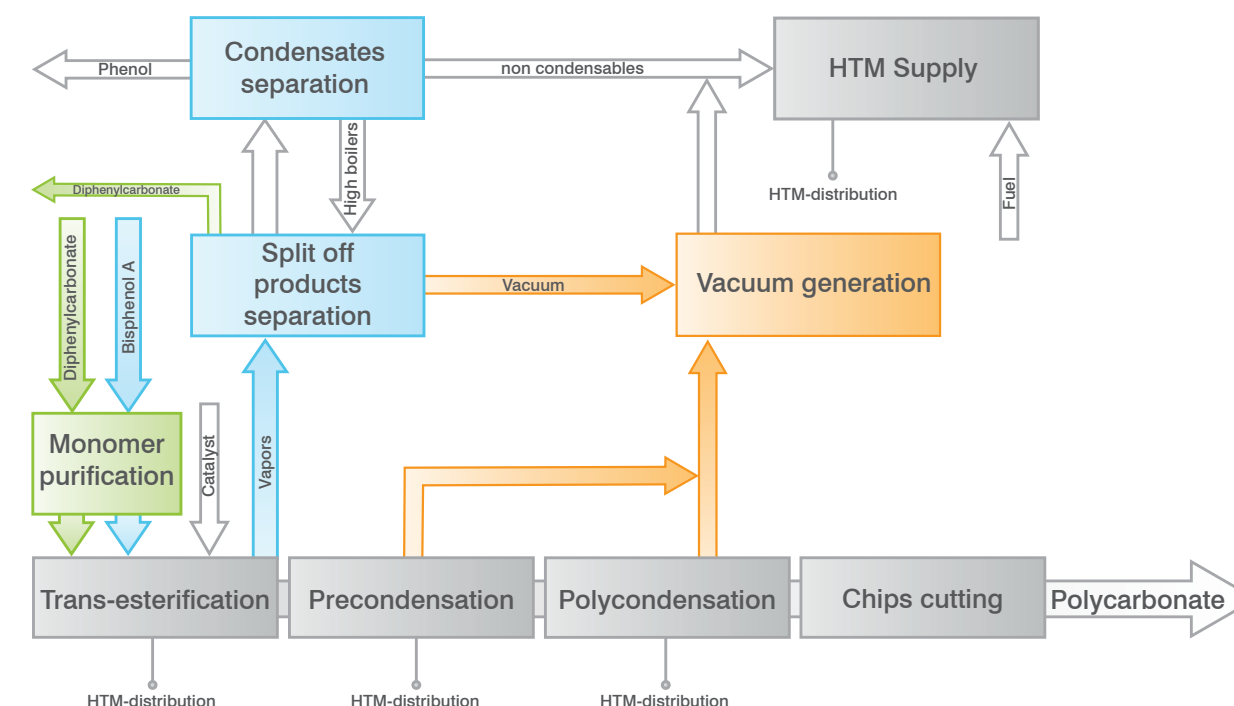
EPC can also offer compounding process technology and recipe formulation assistance as part of the offer.

The plant design includes all necessary utility systems, for example heating medium circulation, vacuum generation, chips cutting after final reactor and chips bagging system.

FIOW DIAGRAM – 100kta POLYCARBONATE



POLYCARBONATE PROCESS OVERVIEW



TECHNOLOGY KEY POINTS:

Flexible design

- Two independent finishing lines
- Wide MFR range
- Quick Changeover between grades
- Hermetically sealed system
- Special material selection

Reliable design

- High plant availability