PA6 and PA6.6

Plants for the production and processing of polyamide

IDEAS INSIDE

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

Polyamides - real all-rounders

Probably the best known synthetic fibre is Nylon. With the development of the thermoplastic material, demands unreachable until then could be fulfilled, above all in the clothing industry: when the first nylon stockings came onto the market in 1940, 4 million were sold within 4 days. The EPC Group can look back on long experience in the supply of PA 6 and PA 6.6 systems. Our own patents prove the innovative technology in the systems designed or modernized at a reasonable price by us.

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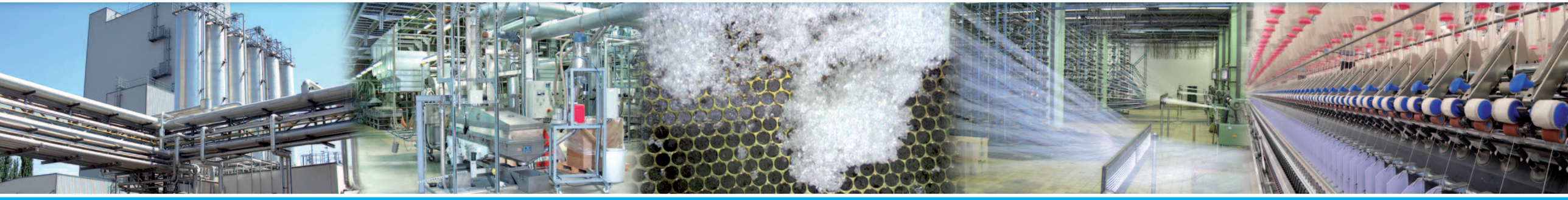

PA 6 and PA 6.6
Production and processing - EPC PAtraction®

Our patented PA 6 extraction method – EPC PAtraction® – demonstrates the decades of experience in the processing of polyamides.

In the production of polyamide 6, residual content of the monomer (Caprolactam) remains in the polymer after the polymerisation reaction, because it is not converted 100%. This residual monomer is now removed from the polymer by extraction following the polymerisation and fed back to the process. The product is guided out of the cooler without oxygen being able to enter the post-condensation device, which works under a nitrogen atmosphere.

With the method patented by EPC, it is possible to achieve an optimum exchange of the material by making use of a nitrogen degassing in combination with a higher pressure. In this way, a considerable reduction of the extract content in the granulate is achieved, while at the same time the extract water is enriched to about 18%. In addition, a distinctly higher standardisation of the retention time is achieved. This is why deviations in the extraction concentration are clearly reduced.

The method developed by EPC can also be implemented in existing systems without major investment costs or long modernisation periods. By means of a specific device, nitrogen is distributed into up to 16 extraction zones in the string. In the device, granulate flows from top to bottom in a packed bed. The nitrogen and the extract water are guided upwards in the counterflow. The device comprises beds arranged on top of one another. Nitrogen is distributed into the cross-section of the string when passing the beds. These beds have been built with constrictions and a unified gas room, formed of distribution ribs and a peripheral annulus. The possibilities of pressure compensation of the nitrogen in the bed result from the defined gaps in the distribution ribs for entrance and constant re-exit of the gas into the cross-section of the string in the event of pressure differences between the constrictions and the bed area as a result of differing gas quantities.

Our offer of services ranges from the individual development, the planning and projecting down to implementation of the turnkey polyamide system. Existing systems are modernised by us at a reasonable price and with low time consumption, and we also support our customers in feasibility studies and the project financing.

Special PA 6 and PA 6.6 installations:

Raw granulates | Granulates for filament production
Coated master batches | Colour master batches
Thermo-stabilized granulates | Technical compounds
Film granulates

CONTACT PERSON

For general questions around PA 6 plants and EPC PAtraction® please contact:

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EPC GROUP
IDEAS INSIDE®

ADVANTAGES OF EPC PAtraction®

EPC PAtraction® is a very efficient and cost-effective extraction process for polyamide, developed by EPC. Advantages of EPC PAtraction®:

- Possibility of multiple extraction zones in one reactor (12 – 16 Zones)
- High content of extractables in the overflow (> 18 %)
- Simultaneously reduction of the residual content of extractables in the chips (< 0,25 %) or;
- Lower throughput of extraction water at higher content of extract in the chip (e.g. for compounding products)
- N2-gasing causes high turbulences in the border zone of the chips. This leads to:

  → *reduced production cost*
  → *capacity lift*
  → *product quality and consistency increase*
  → *higher profit margin*

A HISTORICAL EXCURSION

Chemical fibres from Rudolstadt / Schwarza have a long tradition

Parallel to the development of polyamides like nylon, the Perlon chemist Dr. Hermann Ludewig at the industrial park in Rudolstadt / Schwarza, the headquarters of the EPC Group, succeeded in further developing the plastic fibres from Caprolactam. His objective was producing a textile raw material which was to conquer new fields of use not only on the textile market, but also on the technical sector. As early as 1942, the first polyamide silk was spun in Schwarza as "Cordtyp". After the 2nd World War, large-scale production of the polyamide fibres, which were known under the trade name of Dederon, was commenced. Dederon was related to the known nylon and Perlon fibres.

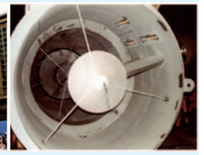
DEDERON®

REFERENCES FOR POLYAMIDE 6 EXTRACTION

East Germany

Revamping of an existing PA6 extraction.
Our services:
- Basic & Detail engineering
- Supply of key equipment
- Commissioning
- Assembling supervision

2005

Honeywell | Rudolstadt / Germany

Reconstruction of Polyamide plants
Our services:
- General planning
- Supply of complete equipment scope
- Assembling supervision
- Commissioning

1996 - 2001


Rayong / Thailand

Installation of a PA6-extraction system.
Our services:
- Basic & Detail Engineering
- Supply of Key-Equipment
- Commissioning
- Assembling Supervision

2008 - 2009