Tetra Recart

Paperboard in a new challenging environment – The Tetra Recart development story.
Tetra Pak and canned food

- **Organic growth outside liquid food**
  - 160 bio. packs is produced annually

- **Food industry knowledge**

- **Application of Tetra Pak core competencies**
  - Sealing technology
  - Board and polymer properties
  - Printing technology
  - Package material converting
Canning History

1806 Invention of food canning by Nicolas Appert

1810 Peter Durand patented sealed airtight tin can

First opening instruction (1824):

"Cut round on the top near to the outer edge with a chisel and hammer".
Tetra Recart - a large development project

- Ambition to become a major packaging option for producers of canned food

- One of Tetra Pak’s most challenging projects
  - New packaging material
  - New package
  - New form and seal machine
  - Remaining parts based on existing technologies and equipment
Sterilising the food in the package = Retorting = In-container sterilisation
Challenge No 1 – the retorting process

- Package based on paperboard in:
  - 100 % relative humidity
  - up to 130 °C
  - for up to 3 hours...

...and still have
- good appearance
- high print quality
- excellent mechanical properties
- extremely good product protection
- to fit existing recycling systems
The Paperboard development
Package Integrity
How did we solve it?
Paper Board

Challenge

• Moisture resistance at high temperatures

Technical solutions

• Unique board quality with special sizing
Challenge

• To find the polymers that
  • resists 130 °C
  • are not brittle at chilled conditions
  • are extrudable in existing laminator

Technical solutions

• New polymer grades:
  • Polypropylene based
Printing Quality

Challenge

- Find a retortable ink
- Create a good printing surface without using coating material

Technical solutions

- UV-ink
- Print on outside polymer
- Lacquer to protect the print
Challenge No 2 – *Product demands*

- Package based on paperboard with a shelf life up to 24 months
  - Oxygen barrier
  - Light barrier
  - Tight to microorganism
Oxygen barrier

Challenge

- Create an oxygen barrier better than any existing packaging system based on board

Technical solutions

- Polymer reinforced aluminium foil
Product tests

- Joint venture with customers
- MTU - Mobile Test Unit at customer production factories
Packaging material

- Inside polypropylene layer
- Aluminium foil
- Polypropylene
- Paperboard
- Outside polypropylene layer
- Printing and coat of lacquer

Paperboard = Renewable resource
Tetra Recart = the retortable carton

- Volume: ~ 400 ml
- Particle food
- Blanks-fed system
- Laser perforated opening
- Shelf life up to 2 years
- Recyclable
Easy to open

- Perforation with laser technique
  - The "depth" could be adjusted
  - The polymer crystallises
  - The heat improves the adhesion between the layers
Thank you for the attention!