Investor Day
13 September 2018

Wolfgang Grimm
CEO
Agenda

- Perlen Packaging
- The global pharmaceutical market
- Primary packaging: solid-form and powder
- Product innovations
The CPH Group’s Packaging Division

North America

South America

Europe

Asia

Perlen Packaging Ltda., Anápolis
Service and logistics centre for South America

Perlen Packaging LLC, Whippany
Service and logistics centre for NAFTA

Perlen Packaging GmbH, Müllheim
Centre of excellence for PVC monofilms

Perlen Converting AG, Perlen
Centre of excellence for barrier films

Perlen Packaging (Suzhou) Co., Ltd.
Centre of excellence for barrier films

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Megatrends in pharmaceuticals

- Growth and ageing of the world’s population
- Urbanization
- Lifestyle illnesses
  - Better medical treatments
  - Senior-friendly packagings
  - Personalized packagings

Growth in the +60 age group

Source: UN Population Division
Top 20 pharma therapy categories

<table>
<thead>
<tr>
<th>Category</th>
<th>2015</th>
<th>2022</th>
<th>2015-2022 Growth</th>
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<tr>
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<tr>
<td>Anti-diabetics</td>
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<td>Anti-rheumatics</td>
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<td>Anti-hypertensives</td>
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<td>11.1</td>
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<tr>
<td>Dermatologicals</td>
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<td>1.9</td>
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<td>MS therapies</td>
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<td>12.6</td>
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<td>Immunosuppressants</td>
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<td>18.2</td>
<td>6.3</td>
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<td>Anti-coagulants</td>
<td>15.4</td>
<td>16.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Anti-hyperlipidaemecs</td>
<td>11.8</td>
<td>15.8</td>
<td>4.0</td>
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</table>

Source: EvaluatePharma® August 2016
**Pharma market rankings**

The top 20 countries

<table>
<thead>
<tr>
<th>2008 RANK</th>
<th>2013 RANK</th>
<th>2019 RANK</th>
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<tbody>
<tr>
<td>1</td>
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</tr>
<tr>
<td>2</td>
<td>Japan</td>
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<tr>
<td>3</td>
<td>China</td>
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<td>4</td>
<td>France</td>
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<td>5</td>
<td>Germany</td>
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<td>16</td>
<td>India</td>
<td>16</td>
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<td>Greece</td>
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<tr>
<td>20</td>
<td>Belgium</td>
<td>20</td>
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</tbody>
</table>

2014-2019 pharma market growth in USD billion

- **USA**: CAGR 3-6%, 2014: 406 billion, 2019: 500 billion
- **Latin America**: CAGR 5-8%, 2014: 76 billion, 2019: 103 billion
- **Europe**: CAGR 1-4%, 2014: 243 billion, 2019: 279 billion
- **Asia, Africa, Australia**: CAGR 7-10%, 2014: 202 billion, 2019: 302 billion
- **Japan**: CAGR -1-2%, 2014: 88 billion, 2019: 91 billion
- **Pharmerging Markets**: CAGR 10-12%, 2014: 215 billion, 2019: 322 billion

Source: IMS Health, Pharma Prognosis May 2015, SAP PP

"Pharmerging Markets" = Brazil, Russia, India, China, Mexico, Turkey, South Korea
Our competencies

- Innovation leadership
- Global presence
- Continuous Improvement Process
- Operational leadership

100% pharma focus
Our references (in alphabetical order)
Our competencies

- Innovation leadership
- Global presence
- CIP Continuous Improvement Process
- 100% pharma focus
- Operational leadership
Centre of excellence for barrier films

Perlen Packaging (Suzhou) Co., Ltd. / China

- Multiple in-line coating stations
  - Greenfield investment in China
  - State-of-the-art machine technology

- Camera system
  - Visual surface checks
  - Maximum safety

- GMP
  - Latest GMP guidelines
  - Cleanroom Class 8
Agenda

- Perlen Packaging
- The global pharmaceutical market
- Primary packaging: solid-form and powder
- Product innovations
100% focus on pharmaceuticals products

- 90% primary pharma packagings (solid-dosage forms, blister)
- 10% special applications (ampoule packagings, syringe packagings, medical devices)
Packaging markets

- Monofilms
- Barrier films
- Liquid films
- Anti-counterfeiting films
- Antimicrobial films
- Ampoule/syringe packaging films
The PERLALUX® product structure

Three generations of blister packs

- PVC / PVdC 1970-1990
- PVC / PE / PVdC 1983-2009
- PVC / PE / PVdC / PE / PVC 2009-today

Water Vapour Transmission Rate (WVTR)

<table>
<thead>
<tr>
<th>Medium barrier</th>
<th>High barrier</th>
<th>Ultra-high barrier</th>
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<tbody>
<tr>
<td>3.10</td>
<td>0.70</td>
<td>0.25</td>
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<tr>
<td>2.35</td>
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<td>0.25</td>
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<td>1.15</td>
<td>0.25</td>
<td>0.15</td>
</tr>
<tr>
<td>0.12</td>
<td>0.18</td>
<td>0.12</td>
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<tr>
<td>0.04</td>
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<td>0.06</td>
</tr>
<tr>
<td>0.03</td>
<td>0.04</td>
<td>0.03</td>
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</tbody>
</table>

Oxygen Transmission Rate (OTR)

<table>
<thead>
<tr>
<th>Medium barrier</th>
<th>High barrier</th>
<th>Ultra-high barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.0</td>
<td>1.10</td>
<td>10.0</td>
</tr>
<tr>
<td>0.70</td>
<td>0.40</td>
<td>0.40</td>
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<td>0.60</td>
<td>0.40</td>
<td>0.20</td>
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<tr>
<td>0.40</td>
<td>0.16</td>
<td>0.06</td>
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<tr>
<td>0.20</td>
<td>0.067</td>
<td>0.015</td>
</tr>
<tr>
<td>0.03</td>
<td>0.015</td>
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</table>
Innovations launched

- Duplex 1970
- Starflex 1997
- Tristar 1983
- Tristar Ultra 180 2009
- Identity 2005
- Tristar Ultra 120 2007
- Generex 2002
- PERLATOP™ development project 2015
- PERLAMED™ BLISTair development project 2017
- MultiLayer 2010
- Ultra Protect 2012
- Antimicrobial coating 2010
- PERLATOP™ development project 2015
- MultiLayer 2010
- Ultra Protect 2012
- Antimicrobial coating 2010
- PERLATOP™ development project 2015
- PERLAMED™ BLISTair development project 2017
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Our competencies

- Innovation leadership
- Global presence
- Operational leadership
- CIP Continuous Improvement Process
- 100% Pharma focus
Innovations in the pharma product range

Solid-dose packagings

Inhalers

Complementary combination of product/market

Extension of product range

Strengthening and extension of existing product segment

Solid

Liquid

powder

PVC / PE / PVdC / PE / PVC

2009 - today
PERLAZID® - antiseptic

• Antiseptic films, labels, coatings and sprays
• Dermatologically tested
• Ecofriendly
• 100x proven effectiveness

Added value:
• Reduces germs by over 99.9% (> 3 log)
• Bacteria and fungus fully eliminated
• Germs cannot develop resistance
• Critical surfaces protected and safe
BLISTair

- our new product innovation
PERLAMED™ - BLISTair

PERLAMED™ - BLISTair:

• Thermoformed single-use inhaler
• The primary packaging is also the device
• Differing film types = differing barrier properties

Added value:

• A clean and hygienic new device for every inhalation
• Modifiable at any time
• No injection moulding and no complex assembly
Awards earned by PERLAMED™ - BLISTair in 2017/18

2017 Deutscher Verpackungspreis

2017 CPhI Pharma Award

2017 IHZ-Innovationspreis

2018 Alufoil Trophy

2018 Swiss Packaging Award

2018 World Star
Thank you for your attention!

Perlen Packaging