The sunliquid® Process: Bringing New Solutions for Commercial Cellulosic Ethanol Production
### Your committed partner for commercialization

A GLOBALLY LEADING COMPANY IN SPECIALTY CHEMICALS

<table>
<thead>
<tr>
<th>Sales 2015 (CHF m) from continuing operations</th>
<th>Net result 2015 (CHF m) from continuing operations</th>
<th>Business Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>5,807</td>
<td>227</td>
<td><em>Industrial and personal care</em></td>
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<td></td>
<td><em>Catalyst</em></td>
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<td><em>Oil and mining</em></td>
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<td><em>Plastic and coating</em></td>
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<td></td>
<td><strong>Employees 2015</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EBITDA 2015 (CHF m) before exceptionals</th>
<th>EBITDA margin 2015 before exceptionals</th>
<th><strong>110 in 53 companies</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>853</td>
<td>14.7%</td>
<td><strong>17,213</strong></td>
</tr>
</tbody>
</table>

- **Business Areas:**
  - Industrial and personal care
  - Catalyst
  - Oil and mining
  - Plastic and coating

- **Employees 2015:**
  - **17,213**
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GROUP BIOTECHNOLOGY

Munich R&D Center
- Since 2006
- Grand new research centers opened 10.2015
- Projects beyond Cellulosic ethanol (sugar platform, byproduct, enzyme applications)
- 118 employees
- Lab and office space: 6,500 m²
- Pilot plant since 2009

Straubing pre-commercial plant
- Since 2012
- 22 employees
- Area: 2,500 m²
- Wheat straw, corn stover, and sugarcane bagasse converted to Ethanol
The only validated integrated technology solution
THE SUNLIQUID® PRE-COMMERCIAL PLANT

2012
Start of operation at pre-commercial plant

up to 1,000
 t/a output of ethanol

~ 4,500
 t/a feedstock *
  * (cereal straw, corn stover, sugarcane bagasse & others)

~ 4
Years confirmation of commercial-scale design
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PROCESS DESIGN PACKAGE

Technological blueprint
for 50,000 to 150,000 metric tons of cellulosic ethanol production

Comprehensive process design
Modular concept
Standard, proven hardware

For a 50 kt/a plant, a footprint of approx. 14–18 acres (5.5–7.5 ha) is required
Cereal Straw availability
Cereal Straw availability
Agricultural residues
Dedicated energy crops on marginal land
For further information please contact:

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For more information on sunliquid® technology visit www.sunliquid.com