SOLID STATE POLYCONDENSATION SSP

for PET and PES pellets, inline IV increase, decontamination for direct food contact, reduction of acetaldehyde, continuous batch process, innovative design for enhanced flexibility
State-of-the-art Solid State Polycondensation for the IV increase of PET and PES pellets. Possible source material is regranulate of bottles and preforms as well as fibres, nonwovens, sheets and strapping. The crystalline regranulate after the Starlinger iV+ process has characteristics like those of PET resin and is destined for food contact applications such as bottle-to-bottle.

The patented outlet device of the reactor is designed for constant treatment time of the material in the reactor, preventing center flow of the pellets. This FIFO principle ensures efficient and regular decontamination and IV increase.

The preheater heats up the rPET pellets to reaction temperature. Process parameters can be adjusted to influence the speed of the IV increase. The cooler allows immediate packing of the material.

The control unit with userfriendly touch-screen allows storage of process and alarm data, a history overview for each individual batch and downloading to a PC.

AA level is reduced. Foreign particles, e.g. glycol, are extracted during the preheating and SSP process under vacuum. VOCs are minimised or eliminated. The end product is approved for food contact applications.
Advantages

- Effective decontamination and adjustable IV increase under vacuum
- FIFO principle
- Equal residence time for each batch
- Modular design for capacity increase
- Energy saving in case of inline processing
- Low transformation costs

recoSTAR SSP and viscoSTAR

1. Crystallizer
2. Vacuum transport
3. Preheating unit
4. SSP reactor
5. Cooling unit/vacuum sluice
6. Energy recovery kit
7. Storage silo
### Technical data

<table>
<thead>
<tr>
<th>Type</th>
<th>recoSTAR SSP</th>
<th>viscoSTAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>1800</td>
<td>75</td>
</tr>
<tr>
<td>Height</td>
<td>6410</td>
<td>9500</td>
</tr>
<tr>
<td>Width</td>
<td>2810</td>
<td>3580</td>
</tr>
<tr>
<td>Length</td>
<td>3710</td>
<td>3430</td>
</tr>
<tr>
<td>Capacity (kg/h)</td>
<td>250</td>
<td>1200</td>
</tr>
<tr>
<td>Effective volume of reactor m³</td>
<td>1.8</td>
<td>6.8</td>
</tr>
<tr>
<td>Installed heating power [kW]</td>
<td>30</td>
<td>150</td>
</tr>
<tr>
<td>High-vacuum system [mbar]</td>
<td>≤ 10</td>
<td>≤ 10</td>
</tr>
<tr>
<td>Vacuum system [kW]</td>
<td>1 x 7.5</td>
<td>3 x 9.2</td>
</tr>
<tr>
<td>Energy consumption [kWh/kg] approx.</td>
<td>0.12 - 0.25</td>
<td>0.12 - 0.25</td>
</tr>
</tbody>
</table>

#### Crystallizer

Crystallizer To be determined depending on type of input material

#### Solid state polycondensation

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<tr>
<th>Type</th>
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<th>viscoSTAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV increase [dl/g/h]</td>
<td>SSP 1800</td>
<td>SSP 1800</td>
</tr>
<tr>
<td></td>
<td>0.01 - 0.03</td>
<td>0.01 - 0.03</td>
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</tbody>
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Starlinger & Co. Gesellschaft m.b.H.
A member of Starlinger Group

All data depending on design!

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