Product Information

Powerful PO hot melt adhesives for bonding cartons, trays and folding boxes
Clean processing and high yield
Excellent adhesion, high heat resistance and high elasticity at low temperatures
Reduced maintenance, downtimes and costs
Modern polyolefin adhesives (PO) produced by metallocene catalysis are characterised by better adhesion and higher thermal stability compared to standard systems based on ethylene-vinyl-acetate (EVA). PO-based hot melts provide a substantial potential to reduce adhesive consumption due to the very high yield. PO hot melts are clear in the melt and facilitate a very clean processing. This reduces maintenance work and downtimes, and therefore leads to an increase in process efficiency as well as to a decrease in total costs.

INFO: PO hot melt adhesives

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Powerful PO hot melt adhesives for modern packaging processes

Be it primary or secondary packaging, from folding boxes to cartons, trays, wrap-arounds, paper inliners and special shelf-ready packaging – the requirements for packaging material and processes are rising rapidly. Clean, energy-efficient and sustainable solutions are increasingly demanded in the industry – including in the development and application of adhesives.

Modern Jowat-Toptherm® PO hot melt adhesives play a major role in facilitating highly efficient processes as expected by processors. These high-performance adhesives impress with a high yield, excellent adhesion and clean processing. Jowat-Toptherm® adhesives have been established for many years in the different packaging processes and are highly valued by customers due to major economic benefits, such as reduced application amounts, minimised maintenance and less downtimes. Jowat-Toptherm® adhesives also show an excellent performance in very demanding processes. Due to short setting times and high initial strength, they facilitate a secure closure of the packaging, even at high feed speeds and in unfavourable pressing conditions – while resisting the challenging restoring forces of the material. Jowat-Toptherm® hot melts are characterised by a broad spectrum of adhesion and reliably join surfaces which are difficult to bond. The adhesives in granulate form are very colourfast in the melt, virtually odourless and can be dispensed easily with all established auto-feed systems.

Whether at high ambient temperatures during filling or transport, or at -40 °C in deep-freeze applications, powerful Jowat-Toptherm® adhesives provide a reliable bond in extreme temperatures.

About half of all packaging manufactured worldwide comes into contact with food. Food safety has therefore always been a major focus of Jowat – from using suitable raw materials, meeting strict guidelines, as well as supporting our customers to ensure food safety compliance. The introduction of substrates with a mineral oil barrier is another field of application in which processors benefit from Jowat-Toptherm® products and the comprehensive know-how of our enterprise. Jowat understands the challenges in the packaging industry and provides the expertise necessary to meet the high requirements.

No matter what the requirements are in your packaging process, the modern adhesive products from Jowat provide a suitable solution for your application. Our permanent focus is to facilitate optimised manufacturing conditions and to meet the customer expectations in the best possible way.
Adhesive transition to Jowat-Toptherm® products:
Transition from other established PO hot melts to Jowat-Toptherm® adhesives is easy and uncomplicated. Processors of EVA-based hot melts have to observe a few things when switching to adhesives based on PO. Our Application Technology Department and Application Specialists are fully equipped with the skills necessary to ensure a fast and smooth transition. We are ready to support you with our deep expertise and a top-quality advisory service.

Generally, increasing the temperature of the adhesive also leads to:
- Lower viscosity (as a general rule, increasing the temperature by 20 °C reduces the viscosity by 50 %).
- Longer setting time and open time.
- Reduced stringing.
- Positive effect on adhesion.
- Increased thermal stress.

How to minimise stringing:
- Use straight nozzles with drill holes and a short capillary length.
- Reduce distance between applicator head and substrate to a minimum (a few millimetres).
- Increase adhesive temperature.
- Choose bead length and positioning on the substrate according to available surface.
- Prevent draught.

Parameters to adapt the application amount:
- Unit pressure (usually between 1.5 and 4.5 bar).
- Nozzle diameter (usually between Ø 0.31 and Ø 0.51 mm) and, if applicable, capillary length.
- Processing temperature and viscosity of the adhesive.
- For carton closing, the compressed adhesive bead should have a width of at least 8 mm (note: 1 m of hot melt bead, Ø 2 mm, weighs 2 – 3 g).

Maintenance:
- Tear tests should be carried out in regular intervals to check the quality of the bond.
- The final strength of the bond should be tested again 24 hours after bonding.
- Check the adhesive amount and positioning of the adhesive bead in regular intervals.
- Store the adhesive in closed containers to prevent contaminations.
- Regularly check inline filters and equipment filters.

Tips & tricks
The following table shows a selection of our PO hot melt adhesives from the Jowat-Toptherm® product series for bonding cartons, trays and folding boxes. The technical data, characteristics and field of application provided in the table outline the differences between the individual adhesives of the product portfolio. Our Application Technology Department and our Sales Representatives are on hand to provide advice and find the best adhesive for your particular application.

<table>
<thead>
<tr>
<th>Jowat-Toptherm® 256.10</th>
<th>Jowat-Toptherm® 256.65</th>
<th>Jowat-Toptherm® 256.91</th>
<th>Jowat-Toptherm® 256.00</th>
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<tbody>
<tr>
<td><strong>Technical Data</strong></td>
<td></td>
<td></td>
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<tr>
<td>Viscosity at 160 °C [mPas]</td>
<td>approx. 1,100</td>
<td>approx. 1,600</td>
<td>approx. 650</td>
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<tr>
<td>Processing temperature [ºC]</td>
<td>140 - 180</td>
<td>140 - 180</td>
<td>130 - 160</td>
</tr>
<tr>
<td>Open time [s]</td>
<td>approx. 10 at 160 °C</td>
<td>approx. 10 at 160 °C</td>
<td>approx. 8 at 140 °C</td>
</tr>
<tr>
<td>Setting time</td>
<td>very short</td>
<td>very short</td>
<td>very short</td>
</tr>
<tr>
<td>Softening point ring &amp; ball [ºC]</td>
<td>approx. 110</td>
<td>approx. 115</td>
<td>approx. 110</td>
</tr>
<tr>
<td><strong>Characteristics</strong></td>
<td></td>
<td></td>
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<tr>
<td>Low temperatures ++(+)</td>
<td>++</td>
<td>++</td>
<td>++</td>
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<tr>
<td>High temperatures ++(+)</td>
<td>+++</td>
<td>++</td>
<td>++</td>
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<tr>
<td>Difficult surfaces ++(+)</td>
<td>++</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Adhesive tear-off ++(+)</td>
<td>++</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>Thermal stability +++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
</tr>
<tr>
<td>Dispensing +++</td>
<td>+++</td>
<td>+++</td>
<td>+++</td>
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<tr>
<td>Approved for food contact according to EU 10/2011, FDA 175.105</td>
<td>EU 10/2011, FDA 175.105</td>
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<td>EU 10/2011, FDA 175.105</td>
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The information given in this leaflet is based on practical experience and on results of tests in our laboratory, and does in no way constitute any guarantee of properties. In light of the huge diversity of materials and the fact that we have no influence either on the substrates or on the process, no liability may be derived from these indications nor from the recommendations made by our free technical advisory service. Customer trials are absolutely necessary. Before processing, please request the corresponding data sheet and comply with the indications in it!
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