



## Range of applications **Hotmelt (solvent-free)**



### **THE CHALLENGE.**

**When it comes to successfully producing and compounding hotmelt adhesives, there are several decisive factors:**

the targeted meltability of different formulation components, extremely short

compounding times of just a few minutes, an extruded material of constant homogeneity, a low-shear and material-friendly compounding process, and effective cooling over a short distance.

### **THE SOLUTION: the ENTEX Planetary Roller Extruder.**

**Hotmelt adhesives are thermoplastic adhesives that solidify at room temperature and which are based on various chemical raw materials.**

With reactive processes, the challenge lies in combining various substances with different chemical and physical properties (or thermal and mechanical stress limits) according to a specific formulation. The reliable compounding and reaction technology offered by the ENTEX Planetary Roller Extruder (PRE) is ideally

suited for compounding various hotmelt adhesives. Thanks to the individually configurable modular construction of the extruder module, it is also possible to implement reactive compounding and homogenisation processes for adhesives.



#### **Typical areas of application**

- Bonding packaging and boxes
- Binding processes in the printing and media industries
- Bonding building materials
- Adhesive bonds in the automotive industry
- Bonding components in furniture manufacturing
- DIY and arts and crafts

**ADHESIVES****Benefits of producing and compounding.****Targeted melting of various formulation components****efficient**

Substances with different properties can be deliberately conveyed into defined temperature zones. In this way, for example, wax can be melted without flocculation

or adhesion, something that requires a considerable period of time with other systems.

**Stable homogeneity of the extruded material**

The outstanding mixing and effective tempering in the Planetary Roller Extruder ensure that the homogeneity and viscosity of the extruded material remain constant.

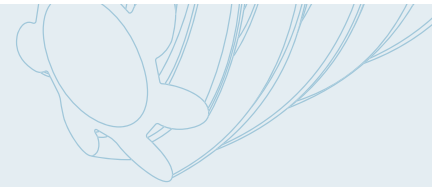
In this way it is possible to maintain the consistent high quality of the product.

**A low-shear and material-friendly compounding process****the key**

The key is that the adhesive is only subjected to a low mechanical stress thanks to the low-shear and material-friendly compounding process. The targeted, process-oriented input of energy in well-coordinated

temperature-controlled zones without hotspots ensures that there are no temperature spikes or localised overheating of the material.

**HIGH THROUGHPUT****IMPROVED PRODUCT QUALITY**



### Extremely short compounding times of just a few minutes

The throughput times in the Planetary Roller Extruder are comparatively short. The result:

the material is only subjected to mechanical and thermal stress for a brief period.

### Dispensing with discontinuous intermediate work processes

**cost-effective**

Compounding in a continuous process with a single heat level offers economic benefits compared to discontinuous production

processes. Energy costs are lower on account of the reduced number of heating and cooling steps.

### Effective cooling over a short distance

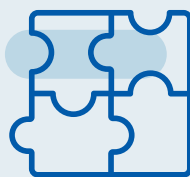
Effectively cooling the extrudate to the required target temperature/viscosity during the compounding process makes it possible

to continue processing the material directly without any additional tempering processes.

### Eliminating batch fluctuations

Batch fluctuations – something that can occur with the discontinuous compounding of adhesives – are eliminated by the continuous

processes made possible by the Planetary Roller Extruder. The result: significantly more consistent product quality.



**SIMPLIFIED PROCESS CHANGES**



**A SECURE INVESTMENT**

# Precision extrusion A system concept that delivers.

This system's combination of a targeted, process-oriented feed of various fluids and solid materials in defined process zones with mechanical configurability and efficient tempering allows it to conduct

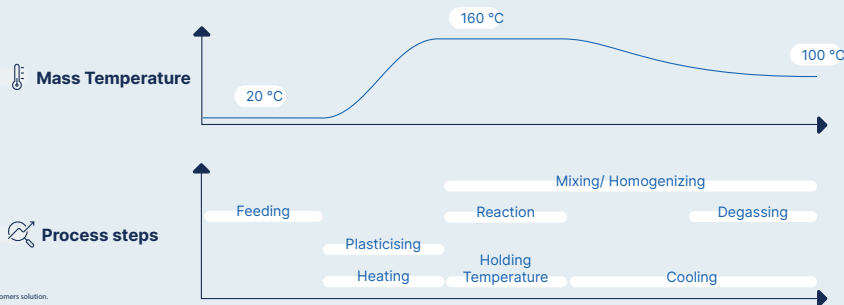
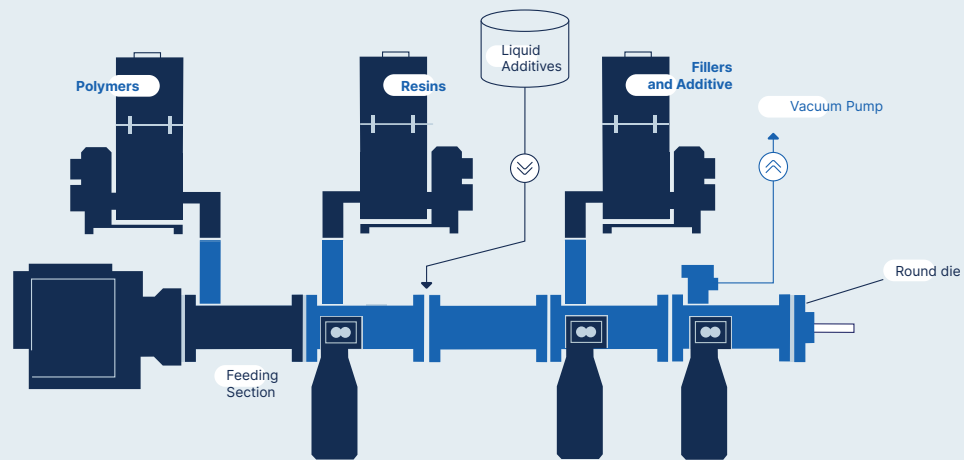
gentle, low-shear compounding to produce extrudates with outstanding homogeneity. Every single step in the process can be controlled individually.



## PRE-M4

# The hotmelt adhesive compounding process.

PRE-M4  
Hotmelt Compounding



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ENTEX Rust & Mitschke GmbH  
Heinrichstraße 67 a | 44805 Bochum | Germany  
info@entex.de | www.entex.de/en

Phone +49 (0) 234 891 22 0  
Fax +49 (0) 234 891 22 99