



Application Notes

Hot Melt Adhesives

The **MCT 300** can measure hot melt adhesives on paper, board and textiles. Hot melt adhesives are typically solvent free thermoplastics, they melt or decrease in viscosity at temperatures in excess of 180° F, then rapidly set upon cooling. They can be repeatedly softened by heating, and hardened by cooling, this property makes them very useful in discontinuous manufacturing processes where one of the 2 substrates may be applied in a separate location. Different polymer systems are used to form hot melts depending upon the application:

Acrylates (hot melt PSA) are used in packaging and construction

Styrenes (SIS and SBS) are used in pressure sensitive applications

Polyamides are used in high strength hot melt adhesive systems

Polyethylene (PE), Polypropylene, and other olefins are used for a variety of applications

Polyurethane (PU) adhesives are used in applications where excellent flexibility and durability are required.

Measurement of coat weight is important for 2 main reasons: If wound:

1. Adhesive coating needs to be uniform to provide a high coefficient of adhesion between the two substrates.
2. For cost effectiveness, the aim is to apply the minimum quantity of coat weight in order to achieve adhesion.

Manufacturing Process

Polymer granules are apportioned into an extruder whereupon they are melted, and applied with a doctor blade into the engravings of an engraved roller through a slit die, before being applied to the substrate. Alternatively the molten adhesive is extruded through a slit die onto the substrate at the nip between a pressure roll and a metal chill roller.

Measurement Locations

Measurement is made immediately after the chill roller, on the set adhesive. The gauge should be mounted approximately 8 inches from the surface of the web.

Measurement Performance

Measurement	Range %	Typical Accuracy %
Hot-melt adhesives	10-50 gsm	+/- 0.3 gsm