

USE

Hot melt adhesives are used in industry for a variety of applications, including crafts, electronic board manufacturing, parts assembly, and in the packaging industry.

TEST EQUIPMENT

- Instrument: Viscometer or Rheometer
- Spring Torque Range: RV
- Accessory: Thermosel Temperature Controller
- Spindle/Chamber: Disposable SC4-27 spindle with HT-2DB Sample Chamber
- Speed: 5, 10, 15, 20 rpm
- Temperature: 175°C

TEST METHOD

The experiment was performed in accordance with procedures outlined in the "Standard Test Method for Apparent Viscosity of Hot Melt Adhesives and Coating Materials", as described in ASTM Standard D 3236-88. This test method determines the apparent viscosity of hot melt adhesives and coating materials at temperatures up to 175°C. The method outlines how the solid adhesive material is to be heated to a molten state, allowing for apparent viscosity measurements using a Brookfield Rotational Viscometer. Please reference this standard for further details on the defined test procedure.

In this example, a Brookfield RVDV2T Rotational Viscometer was used with a Thermosel temperature controller to bring glue sticks from two different manufacturers to a temperature of 175C. Disposable sample chamber HT-2DB and a disposable #27 spindle were used. Temperature and rotational speeds were controlled using Brookfield RheocalcT software. Both samples were tested using the same set of speeds to ensure equivalent shear rates were being applied. In addition, these speeds produced scale readings within the methods specified 10 and 95%.

Figure 1 was generated using our RheocalcT software to provide a visual comparison between the test results of the two different manufacturers. The test results clearly distinguish the material from two different manufacturers. The more viscous material is also shear thinning, while the less viscous material demonstrates less influence from shear rate effects.

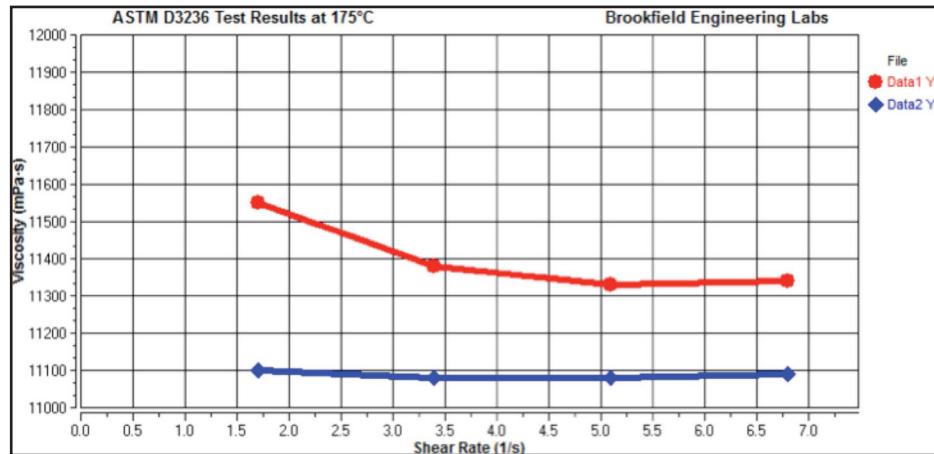


Figure 1: Comparison of Two Different Manufacturers

SETTING THE STANDARDS in Viscosity Testing