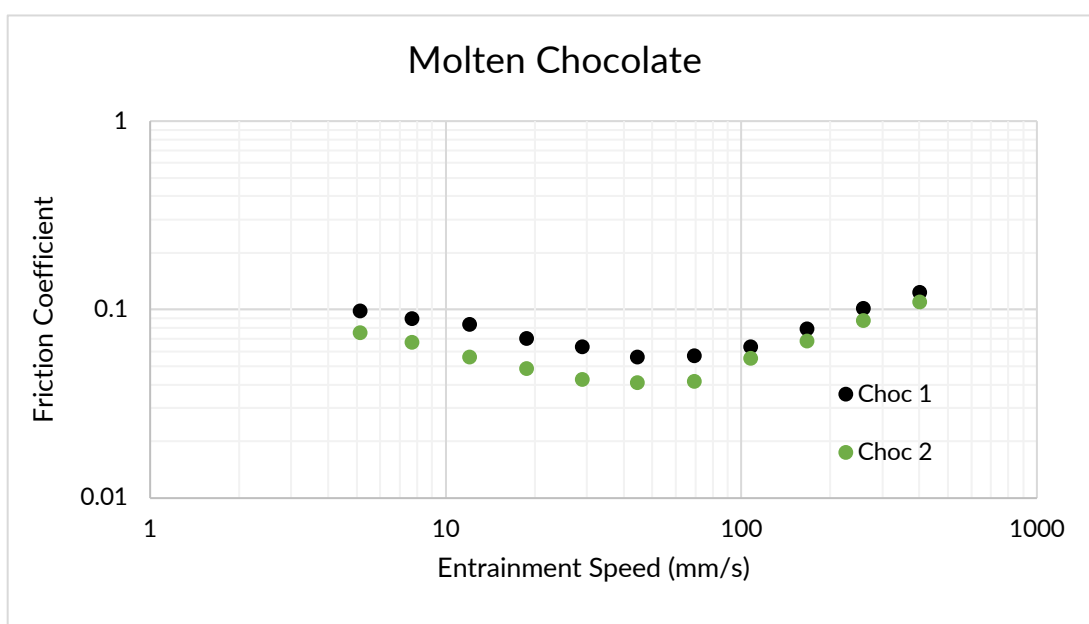


Biotribology evaluation of chocolate

Over 380 million kilograms of chocolate is sold in the UK every year. With 1 in 6 people enjoying a bar of chocolate every day. People enjoy the taste of chocolate and also the sensation of the chocolate melting in their mouth. The changing phase of the chocolate and its changing viscosity controls the friction between the eater's tongue and oral cavity. Giving a distinct and pleasurable sensation. The process of how the chocolate imparts different sensations on the eater is entirely a Tribology based process.

The client wanted a Biotribology test method that could simulate and measure the sensation imparted by the chocolate during the eat. The test method would then be used to evaluate new products in their R&D. We worked closely with the client to understand the state of the art in Biotribology evaluation of foods, then used this as a basis for developing the best possible tool for them.

We manufactured custom discs with a texture like the tongue – to better mimic the human tongue. We modified a commercial instrument to ensure a high level of accuracy and repeatability in the Biotribology testing. The method simulates the eating process whilst measuring friction between the realistic mouth surfaces. Giving insight into how the chocolate controls the friction and how this effects the mouthfeel. The method can differentiate between different chocolates and correlates to panel testing.



This Biotribology test method is now being used by the client to evaluate new chocolate formulations. This method gives better data than panel testing alone. It is also being used for the evaluation of other food products.

