Process Capability Example

A chemical manufacturer produces a lubricant formulation for a customer according to a viscosity specification of between 100 and 150 mN s m\(^{-2}\). The latest series of production batches have been shown to have a mean viscosity of 140 mN s m\(^{-2}\) with a standard deviation of 5.0 mN s m\(^{-2}\).

(a) Calculate the **process capability index** and the **process performance index** for the lubricant production process.

(b) State what the consequences of these values would be for the manufacturer. Suggest ways of managing the situation.