

### Melting of Ni Based Alloy Samples

- Objective:** Superheating molten metal for a different sample mass.
- Equipment:** Ambrell EASYHEAT™ 10 kW, 150-400 kHz solid state induction power supply with a workhead and coil specifically designed for this application.
- Frequency:** 268 kHz
- Material:** Ni based alloy between 10 - 18g (0.35 - 0.63 ounce).
- Temperature:** 2642 - 2912 °F (1450 - 1600 °C)
- Testing:** A single-position nine-turn helical coil was used to generate the required heating for the application. The 16-gram slug of steel was placed into the coil and supported with a ceramic rod. When the sample was melted the part changed shape to an inverted tear drop.
- The customer was looking for repeatable superheating of the molten metal for a different sample mass. They were holding parts on a copper hearth with a central hole. The testing met the client's objectives.
- Benefits:** Induction heating offers this application:
- Hands-free heating
  - Involves no operator skill required for manufacturing
  - Even distribution of heating
  - Fast, controllable temperature ramp
  - Consistent results



**Ni based sample  
prior to melting**

**Ni based sample being  
heated to melting point**



**Sample reaching  
melting point**

