

# Technical Data Sheet

## **AMPCO-TRODE® 940**

### *Laser filler metal*

#### **Description and Application**

AMPCO-TRODE® 940 is an alloy developed to provide an effective alternative to beryllium copper.

Because of its excellent thermal conductivity, thermal diffusivity, wear resistance and corrosion resistance, AMPCO-TRODE® 940 laser welding filler metal is specified for the repair of complex AMPCOLOY® 940 molds used for the production of plastic parts.

AMPCO-TRODE® 940 laser filler metal is applied with the laser welding process. The nature of this process permits very non-invasive, almost surgical welds, as compared to conventional arc welding. Due to the very localized temperatures involved, mold distortion generally experienced with conventional arc welding processes are drastically reduced, often near to zero.

#### **Operating conditions**

Shielding gas

Gasflow rate

100% Argon 8-12 L/min, depending on nozzle diameter.

<b>Diameter (mm)</b>	<b>Focus (mm)</b>	<b>Power (kW)</b>	<b>Pulse time (ms)</b>	<b>Energy (J)</b>
0.25	0.50	2.1	4.4	9.1
0.30	0.60	3.0	3.6	10.8
0.40	0.80	3.3	3.6	15.8
0.50	1.00	5.5	3.6	19.8

#### **Welding Recommendations**

- Preheating the part to be welded to 250°C is useful, but this may affect the laser welding process.
- After welding, cool the part slowly. A welding blanket may be used.
- Extraction of welding fumes is recommended.
- Read and understand the manufacturer's instructions and your employer's safety practices.

Please contact us should you require any additional information or to simply discuss your welding challenges with us.

#### **Typical Applications**

Repair of blow molds and injections molds and their components, such as cores and pins, made in AMPCOLOY® 940.

#### **Limiting Chemical Composition**

*% (filler metal)*

Copper*	balance
Nickel	2.0-3.0
Silicon	0.4-0.8
Chromium	0.1-0.6
others	0.5 max

\* including Silver

#### **Product availability and packaging**

AMPCO-TRODE® 940 laser filler metal is available from stock in the following diameters: 0.25, 0.3, 0.4, and 0.5 mm. Other larger diameters are available upon request.

