



## A-Trode®

The universal cap electrode for reliable resistance welding of light-to-medium gauge coated and uncoated steels

### **A-Trode® production**

Produced by Luvata's proprietary billet casting process, A-Trode's freedom from oxygen allows us to alloy the copper with the optimum levels of chrome and zirconium. Electrodes are cold headed or machined to suit the required shape.

Luvata has a long history of supplying high quality CuCrZr (A-Trode) electrodes.



### **About Luvata**

Luvata is a world leader in metal solutions manufacturing and related engineering services. Luvata's solutions are used in industries such as renewable energy, power generation, automotive, medicine, air-conditioning, industrial refrigeration, and consumer products. The company's continued success is attributed to its longevity, technological excellence and strategy of building partnerships beyond metals. Employing over 6,500 staff in 17 countries, Luvata works in partnership with customers such as Siemens, Toyota, CERN, and DWD International.



## Specification - Quality

Alloy	C18150 CuCrZr, EN ISO 5182 A2/2, DIN 17666 Wn 2.1293	
Chemical composition	Cr 0.7% to 1.2%, Zr 0.06% to 0.15%. Others max. 0.2%, Cu remainder.	
Physical material properties at 20°C	Mass Specific heat Thermal conductivity Expansion coefficient (20-300°C) Electric conductivity (solution-annealed and hardened) Softening temperature	8.9g/cm <sup>3</sup> 0.376 J/kg.K 320 W/m.K 17.0 x 10 <sup>-6</sup> m/mK min. 43 S/m min. 74% IACS min. 500°C
Dimensions and tolerances	To ISO 5821 or other standards as required. Special electrodes to customer drawing.	
Packaging	Most items in cartons of 500 pieces.	
Documentation	Acceptance test certificate EN 10204 3.1 B possible if desired against a charge.	
Area of application	Male and female resistance welding electrodes. Backing dies. Series welding backing dies Indirect welding backing dies.	

Errors and omissions excepted. Values given are industry standards.

## Specifications - Quality

Form of supply	Tensile strength [N/mm <sup>2</sup> ]	0.2% Offset yield strength [N/mm <sup>2</sup> ]	Elongation AS [%]	Hardness HV
Electrodes	≥ 490	≥ 430	≥ 15	≥ 172

## Luvata's other resistance welding products

Nitrode® Dispersion Strengthened Copper

Z-Trode® Zirconium Copper

Backing dies adaptors and other resistance welding accessories.

Luvata welding electrodes are available in all industry sizes, geometries and tapers.

### Authorized distributor for Luvata Ohio:

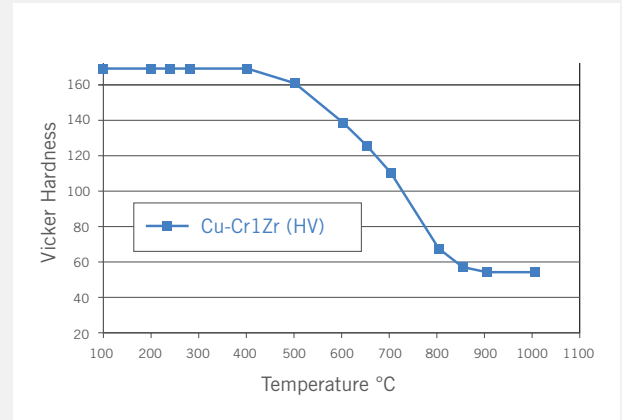
#### Production Engineering

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A-Trode metallurgy



Conventional CuCrZr grain structure



Luvata CuCrZr fine grain structure

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