



A-TRODE™

The universal cap electrode for reliable resistance welding at minimum piece price.

By combining Luvata's copper alloying, cold forming expertise and resistance welding expertise, we have developed this Chromium Zirconium Copper electrode as the reliable, consistent electrode at minimum price per part.

Specification - Quality													
Alloy	C18150, CuCrZr, BS EN DIN ISO 5182 A2/2, material no. 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	<table border="0"> <tr> <td>Mass</td> <td>8.9g/cm²</td> </tr> <tr> <td>Specific heat</td> <td>0.376 J/gk</td> </tr> <tr> <td>Thermal conductivity</td> <td>320 W/mk</td> </tr> <tr> <td>Expansion coefficient (20-300°C)</td> <td>17.0 x 10⁻⁶ m/mK</td> </tr> <tr> <td>Electric Conductivity (solution-annealed and hardened)</td> <td>min. 43 m/Ωmm²</td> </tr> <tr> <td>Softening temperature</td> <td>min. 74% IACS min. 500°C</td> </tr> </table>	Mass	8.9g/cm ²	Specific heat	0.376 J/gk	Thermal conductivity	320 W/mk	Expansion coefficient (20-300°C)	17.0 x 10 ⁻⁶ m/mK	Electric Conductivity (solution-annealed and hardened)	min. 43 m/Ωmm ²	Softening temperature	min. 74% IACS min. 500°C
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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.												

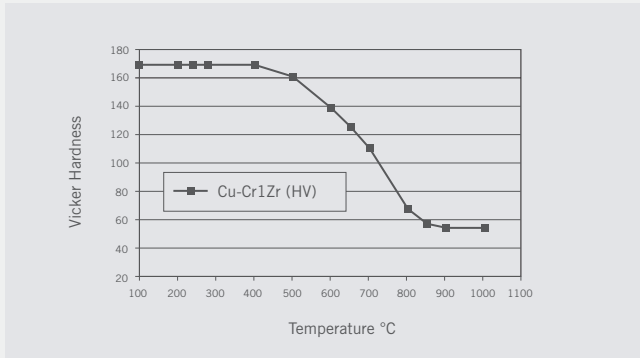
Errors and omissions excepted. Values given are industry standards.

Form of supply	Electrodes
Tensile Strength [N/mm ²]	≥ 490
0.2% Offset Yield Strength [N/mm ²]	≥ 430
Elongation AS [%]	≥ 15
Hardness HB MD ²	≥ 155
Hardness HV 30	≥ 160

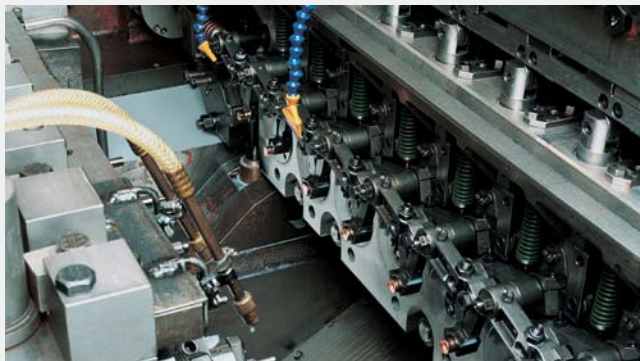


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A-TRODE Metallurgy



Cold Heading of Electrodes



Conventional CuCrZr Grain Structure



Nippert CuCrZr Fine Grain Structure

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.

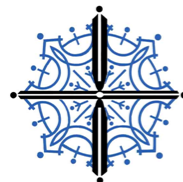
Nippert’s Other Resistance Welding Products

- Nitrode
- Z-trode
- Dispersion Strengthened Copper
- Zirconium Copper

Backing dies adaptors and other resistance welding accessories.

Traceability

All Luvata materials are fully traceable and quality assured. A-trode can be recognised by the distinctive taper design that helps water cooling in service.



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About Luvata

Luvata is a world-leader in metal fabrication, component manufacturing and related engineering and design services. We are committed to partnering with our customers to help them increase their competitiveness. Our products and services enable our customers to improve operational efficiency, improve products and reduce tied-up capital. This focus on our customers’ results, backed by our unflinching reliability, makes us a partner on which our customers base their future development.

For more information about the Luvata Z-Trode™ please contact:

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Certificate Number 8707

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