Cupal®

A cost effective, high-performance cap electrode

The Cupal cap is a cold-formed alloy of dispersion strengthened copper (DSC) with aluminum oxide. It consistently outperforms copper chrome and copper chrome zirconium electrodes in resistance to annealing, consistent electrical conductivity, electrode life and lower maintenance costs.

Cupal® resistance-welding electrodes

by LUVATA

Advantages of Cupal welding electrodes:

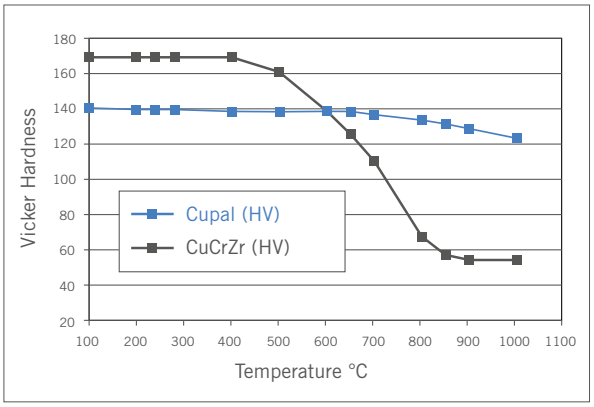
- longer weld life
- anti-stick characteristics
- reduces energy requirements
- works on all steels
- resists mushrooming for improved up-time

About Luvata

Luvata is a world leader in metal solutions manufacturing and related engineering services to industries such as renewable energy, automotive, healthcare, and power generation and distribution. The company's continued success is attributed to its longevity, technological excellence and strategy of building partnerships beyond metals. Employing approximately 1,400 staff in 6 countries, Luvata works in partnership with customers such as ABB, CERN, Siemens and Toyota. Luvata is a group company of Mitsubishi Materials Corporation.

Quality Properties*

Alloy	C15725 $CuAl_2O_3$, EN ISO 5182 C20/1, RWMA Class 20
Chemical composition	Aluminum 0.25% by weight as Al_2O_3 Copper balance
Physical material properties at 20°C	Density 8.86 g/cm³ Thermal conductivity 344 W/m.K Expansion coefficient (20-150°C) 16.6 x 10^{-6} m/mK Electrical conductivity 87% IACS Softening temperature 1083°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



Hardness at high temperature

Grain structure of DSC with aluminum oxide

Mechanical Properties*

Form of supply	Tensile strength MPa	Yield strength MPa	Elongation [%]	Hardness HV
Electrodes	441 - 489	365 - 413	18 - 23%	140

Physical Properties*

Hardness at ambient temperature	76 HRB
Electrical conductivity	87% IACS

*Errors and omissions excepted. Values given are industry standards. Actual properties will vary dependent upon amount of cold work.

Traceability

All materials are fully traceable. A Cupal electrode can be recognized by its four (4) pair of knurls evenly spaced around the periphery of the electrode.


Luvata Cupal electrodes

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