



Nitrode®

No other cap electrode can match Nitrode® for its cost-effective, high quality performance in resistance-welding applications

Luvata's Nitrode cap is a cold-formed alloy of copper dispersion strengthened with Aluminium Oxide. It consistently outperforms copper chrome and copper chrome zirconium electrodes in resistance to annealing, consistent electrical conductivity, electrode life and maintenance costs.

Longer weld life

Nitrode caps last longer than conventional electrodes by resisting annealing.

Non-stick

Nitrode caps reduce sticking of electrodes on galvanized steel and other coated metals. The refractory qualities of Al_2O_3 reduce the infusion of liquid and gaseous zinc into the copper matrix.

Resists mushrooming

Nitrode's resistance to mushrooming minimizes its dressing frequency to one-fourth that of conventional electrodes, significantly reducing line downtime and re-welds.

Reduces maintenance downtime

Nitrode caps require less overall maintenance than conventional CuCrZr and CuCr electrodes, increasing welding process and production efficiencies.

Reduces energy requirements

Nitrode requires lower current when used on both sides of the weldment. Current settings on your welder can be reduced by up to 10% from conventional settings, with no loss of weld quality.

Smoother start-ups

Nitrode caps require no warm-up, conditioning time or initial preparation following electrode changes. If you use automatic step-up controls, the incremental settings can be varied to minimize current adjustments with no loss of weld integrity. The results are fewer electrode changes, fewer interruptions for dressing and smoother start-ups.



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 6,400 staff in 16 countries, Luvata works in partnership with customers such as Siemens, Toyota, CERN, and DWD International.



Works on all steels

Nitrode has demonstrated superior welding performance for a variety of steels, including HSS, HSLA, micro-alloyed, nitrogenized, low-carbon, electrolytically zinc-coated, galvanized and many others.

Nitrode cuts your company's costs

Improved up-time from reduced tip changes, maintenance savings, less tip-dressing, improved weld quality, and lower current settings will increase your company's productivity, and cut your costs compared to conventional electrodes.

Nitrode metallurgy

Nitrode is a composite alloy of copper and Al_2O_3 to become CDA alloy 15760. Conventional copper alloys anneal at temperatures over 500°C. Nitrode does not suffer significant loss of properties till nearly the melting point of 1083°C.

Nitrode's physical properties

Hardness at ambient temperature:	Minimum 75 HRB
Conductivity:	Minimum 75% IACS

Nitrode's longer weld life

The contact surface of a resistance welding electrode reaches temperatures of up to 900°C during the welding process. As the contact surface on a CuCrZr or CuCr electrode anneals, it softens and the contact surface grows, limiting the electrode life. Nitrode electrodes resist annealing and slow the mushrooming effect on the contact surface of the electrode, allowing more welds before tip dressing, heat stepping, or tip change.

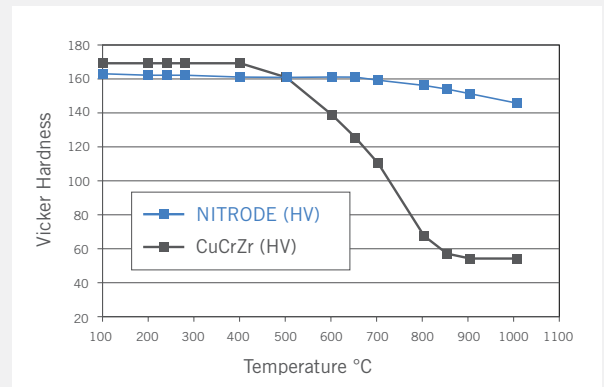
Heat stepping

Nitrode electrodes allow more welds per heat step than conventional alloys. Adjusting heat-programs allows you to take advantage of the longer life of Nitrode electrodes.

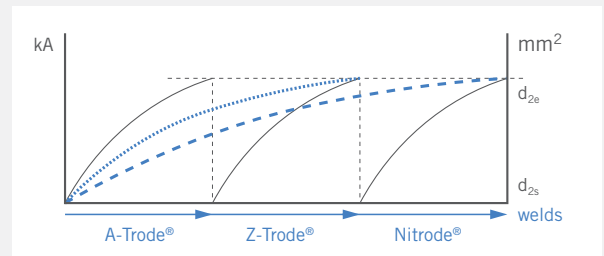
Traceability

All Luvata materials are fully traceable. Nitrode electrodes can be recognized by their single knurls.

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



Hardness at high temperature



Heat stepping



CuCrZr before and after annealing at 900°



Nitrode before and after annealing at 900°



CuCrZr after 1200 welds

Nitrode after 1200 welds

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