



Nickel Plating Chips™ (CDN)

Nickel Plating Chips™ are a high purity form of nickel specifically designed for electroplating with titanium anode baskets. Chips™ are produced by a unique carbonyl gas refining process at the Copper Cliff Nickel Refinery in Sudbury, Canada.

The controlled and consistent purity of Chips™ and the advantages associated with its distinctive shape make this product attractive for general purpose plating with titanium anode baskets:

- Carbonyl refining produces the purest form of nickel available
- Unique shape prevents the formation of bridges and voids in the basket
- Settles uniformly in basket, ensuring uniform current density and high quality deposits
- Flows easily into regular baskets with standard mesh sizes
- Safe to handle (no sharp edges)
- Dissolves at 100% anode efficiency in common nickel plating solutions (containing chlorides)
- Proven and trusted by the world's leading electroplaters

Dissolution produces a small amount of metallic residue which can be contained using cloth anode bags.

Chips™ are produced in compliance with the following ISO standards: ISO 9001:2008.

For further information about our products, please visit our website (www.vale.com) or contact a regional sales representative.

Typical Specifications

Form

- Disc-shaped pieces of nickel
- Diameter: approximately 17 - 25 mm
- Thickness: approximately 4 - 5 mm

Packing Density

Approximately 5.0 g/cm³ of basket capacity

Packaging

- 10 kg bags, 5 bags per box, 20 boxes per pallet (1,000 kg net weight)
- 250 kg steel drums, 4 drums per pallet
- 2 tonne bulk bags

Chemical Analysis (wt %)

Ni*	>99.98
Co	<0.00002
Cu	<0.00004
C	<0.007
Fe	<0.0006
S	<0.0001
Pb	<0.000002
Zn	<0.00002

*Nickel determined by difference.



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2 tonne bag