

## Nickel Anode Plating Chips®

Vale Nickel Plating Chips® are a newly developed nickel anode material for multipurpose nickel surface finishing applications.

They are a non-activated, high purity form of nickel anode material made from Vale's unique carbonyl refining process. The dissolution characteristics are similar to other non-activated nickel anodes and they will dissolve at 100% anode efficiency in common nickel electroplating solutions that contain chlorides. Dissolution produces a small amount of metallic residues.

Chips are disc-like in shape, with a typical thickness of 4-6 mm and diameter of 17-22 mm, making this anode material suitable for plating from titanium baskets with standard mesh sizes.

The unique shape allows the material to pack tightly in the baskets, thus preventing the formation of "bridges" that can create voids in the basket load. This results in more uniform current distribution and deposit thickness, as well as preventing electrochemical attack of the titanium basket in the area of the voids.

Chips are free of sharp edges which make for easy handling and basket loading and enables the basket load to settle without the aid of any ramming action that can result in basket damage.

Vale Nickel Plating Chips® are made by a process that is registered to ISO 9001-2000.

### Form

Disc-shaped pieces of pure nickel, 4 - 6 mm thick and 17 - 22 mm diameter.

### Packaging Density

About 5.5 kg/dm<sup>3</sup> (0.20 lb/in.<sup>3</sup>) of basket capacity.

**Analysis:** Measured in ppm

Parameter	Typical
Nickel	99.98%
Carbon	< 150 ppm
Cobalt	< 0.5 ppm
Copper	< 1 ppm
Iron	20 ppm
Lead	< 0.2 ppm
Sulphur	< 3 ppm
Zinc	< 0.5 ppm

Exceeds the chemical requirements ASTM B 39 and ISO 6283, NR9980 and BS 375

### Packaging

10 kg Plastic Bags - 5 Bags Per Box - 20 Boxes Per Pallet or 250 Kg Steel Drum or 1,000 Ky Super Sack

### Storage /Safety

Store in a cool dry area away from foodstuffs.

**Shelf Life** - Indefinite

