Nickel P-Pellets™ (CDN)

Nickel P-Pellets™ are a high purity form of nickel widely used for electroplating with titanium anode baskets. P-Pellets™ are produced by a unique carbonyl gas refining process at the Copper Cliff Nickel Refinery in Sudbury, Canada.

The controlled and consistent purity of P-Pellets™ and the advantages associated with its distinctive shape make this product ideal 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 and shaped baskets with standard mesh sizes
• Ideal for use with automated basket loading devices
• Safe to handle (no sharp edges)
• Dissolves at 100% anode efficiency in common nickel plating solutions (containing chlorides)

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

P-Pellets™ 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**
- Spherical pieces of nickel
- Diameter: approximately 8 - 12 mm

**Packing Density**
Approximately 5.3 g/cm³ of basket capacity

**Packaging**
- 10 kg bags, 5 bags per box, 20 boxes per pallet (1,000 kg net weight)
- 1 tonne bulk bags
- 2 tonne bulk bags

**Chemical Analysis (wt %)**

<table>
<thead>
<tr>
<th>Element</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ni*</td>
<td>&gt;99.98</td>
</tr>
<tr>
<td>Co</td>
<td>&lt;0.0002</td>
</tr>
<tr>
<td>Cu</td>
<td>&lt;0.0004</td>
</tr>
<tr>
<td>C</td>
<td>&lt;0.007</td>
</tr>
<tr>
<td>Fe</td>
<td>&lt;0.006</td>
</tr>
<tr>
<td>S</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Pb</td>
<td>&lt;0.00002</td>
</tr>
<tr>
<td>Zn</td>
<td>&lt;0.00002</td>
</tr>
</tbody>
</table>

*Nickel determined by difference.

Updated: April 2011