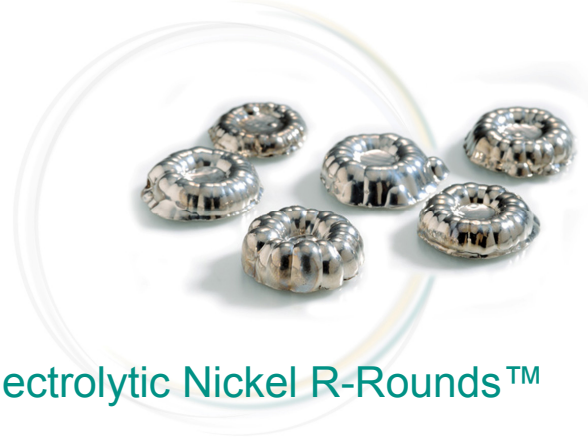

Electrolytic Nickel R-Rounds™

Vale™ Electrolytic Nickel R-Rounds™ are a high purity form of nickel specifically designed for electroplating with titanium anode baskets.

The controlled and consistent quality of R-Rounds™ and their distinctive shape and size make them ideally suited for general purpose plating with titanium anode baskets:

- High purity
- Unique shape prevents the formation of bridges and voids in the basket
- Unique shape ensures good solution flow and mixing through the basket
- Settles uniformly in basket, ensuring uniform current density and high quality deposits
- Flows easily into regular and shaped baskets of various mesh sizes
- Safe to handle (no sharp edges)
- Dissolves at 100% anode efficiency in common nickel plating solutions (containing chlorides)
- Produces minimal metallic residues upon dissolution
- Proven and trusted by the world's leading electroplaters

R-Rounds™ are produced by electrolytic refining at Vale's Thompson Nickel Refinery in Manitoba, Canada, in accordance with ISO 9001:2008 standards.

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

Typical Specifications

Form

- Button-shaped pieces of nickel
- Diameter: approximately 23 mm
- Thickness: approximately 8 mm

Packing Density

Approximately 4.3 g/cm^3 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*	>99.90
Co	<0.08
Cu	<0.0009
C	<0.0035
Fe	<0.0002
S	<0.0002
As	<0.002
Pb	<0.0003
Zn	<0.0002

*Nickel determined by difference.

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250 kg drums, 4 drums per pallet

2 tonne bag

Updated: April 2011