T123™ Nickel Powder
(UK – Premium Grade – Drums)

T123™ is a high purity nickel powder composed of discrete nickel particles having a spiky morphology. T123™ is produced by a unique carbonyl gas refining process at the Clydach Nickel Refinery in the UK.

T123™ is recognized as an industry standard nickel powder for powder metallurgy applications:

- Spiky, needle-like texture designed specifically for powder metallurgy applications
- Tight size distribution optimized for easy mixing and excellent mechanical properties of sintered parts
- Uniform dispersion provides repeatable dimensional change of sintered parts
- Strengthens and toughens to improve fatigue strength
- Hardens heat-treated steels

T123™ is also widely used as a metal binder:

- Enhances corrosion resistance and toughness of hard metals
- Strengthens and toughens diamond tools
- Wets and aids the densification of tungsten heavy alloys


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

Typical Specifications

Form
- Fisher sub-sieve size: 3.8 - 7.0 μm
- Bulk density: 1.8 - 2.6 g/cm³
- Sieve test: ≤0.1 wt% +200#

Packaging
- 200 kg steel drums, 6 drums per pallet

Chemical Analysis (wt %)

<table>
<thead>
<tr>
<th></th>
<th>Typical</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ni*</td>
<td>&gt;99.8</td>
<td>--</td>
</tr>
<tr>
<td>Co</td>
<td>&lt;0.00005</td>
<td>--</td>
</tr>
<tr>
<td>C</td>
<td>&lt;0.0750</td>
<td>0.1</td>
</tr>
<tr>
<td>Fe</td>
<td>&lt;0.0030</td>
<td>0.01</td>
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<tr>
<td>S</td>
<td>&lt;0.0002</td>
<td>0.001</td>
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<tr>
<td>O</td>
<td>&lt;0.0400</td>
<td>0.15</td>
</tr>
<tr>
<td>N</td>
<td>&lt;0.0050</td>
<td>--</td>
</tr>
</tbody>
</table>

*Nickel determined by difference.

200 kg drum

High resolution SEM image of T123™ nickel powder