• SMnN
  – Nickel: 1.3 %
  – Copper: 1.1 %

— Cobalt 0.2 %

Replacement:
• Magnets: Barium, strontium, neodium, nickel
• Paints: Cerium, Iron, lead, manganese, vanadium
• Jet engines: nickel
• Batteries: manganese, nickel,

<table>
<thead>
<tr>
<th>year</th>
<th>Cobalt reserves (ton)</th>
<th>Production (ton)</th>
<th>Recycling %</th>
<th>Tesla (ton)</th>
<th>E-cars (ton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>3 300 000</td>
<td></td>
<td>14 %</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td></td>
<td></td>
<td>20 %*</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>4 600 000</td>
<td>30 800</td>
<td>30 % ?</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td>92 000</td>
<td>18 400</td>
<td>2700</td>
<td>18 400</td>
</tr>
<tr>
<td>2016</td>
<td>7 100 000</td>
<td></td>
<td>40 %**</td>
<td>13 500</td>
<td>32 400</td>
</tr>
<tr>
<td>2020</td>
<td>?</td>
<td>?</td>
<td>?</td>
<td>54 000</td>
<td></td>
</tr>
</tbody>
</table>

*20 % equalled 10 000 t
** EU target Li-ion batteries

1 deep sea mining operation:
CO: 4 000 tons / year
Ni: 22 000 tons / year