### Material Safety Data Sheet
For
Dental Casting Alloy

#### Trade Name:
Non Precious Ceramic Alloy

#### Material Identification:
Chrome-Cobalt Alloy

#### Material Name:
Monarch NBF (Nickel/Beryllium Free)

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Case#</th>
<th>% Composition by wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cobalt</td>
<td>7440-48-4</td>
<td>63 - 65 %</td>
</tr>
<tr>
<td>Chromium</td>
<td>7440-47-3</td>
<td>27 - 29 %</td>
</tr>
<tr>
<td>Molybdenum</td>
<td>7439-98-7</td>
<td>6 - 8 %</td>
</tr>
<tr>
<td>Silicon</td>
<td>7440-21-3</td>
<td>1 - 1.5 %</td>
</tr>
<tr>
<td>Carbon</td>
<td>7440-44-0</td>
<td>.5 - .95 %</td>
</tr>
<tr>
<td>Manganese</td>
<td>7439-96-5</td>
<td>1 - 1.5 %</td>
</tr>
</tbody>
</table>

#### Solid Form:
1) Fire and explosion resistant.
2) Insoluble in water.
3) No odor.
4) Non toxic.
5) No special precautions required.

#### Hazard Data:
- **Chromium:** Eight (8) hr. T1v - 5 mg/m3
- **Molybdenum:** Eight (8) hr. T1v - 1mg/m3
- **Silicon:** Twa - 10 mg/m3

#### Technical Data:
- **Melting range:** 1388 - 1431 °C
- **Yield strength:** 500 - 525 MPa
- **Tensile strength:** 720 - 735 MPa
- **Elongation:** 2 - 3 %
- **Density:** 8 - 8.5 (g/cc)

During casting and grinding avoid inhalation of fumes and dust. Exposure to large concentrations of dust may cause industrial dermatitis and respiratory tract irritation. Chronic exposure to cobalt may cause pulmonary hypersensitivity. Wear protective clothing. Melt, grind and polish in the presence of adequate ventilation. Use respirator, goggles, gloves, coveralls or other protective clothing.