**Beryllium**

<table>
<thead>
<tr>
<th>Atomic number</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atomic weight</td>
<td>9.01</td>
</tr>
</tbody>
</table>

**Collection**

Urine 20 mL Sterile Universal

**Reference ranges**

<table>
<thead>
<tr>
<th>Reference</th>
<th>Serum/plasma nmol/L</th>
<th>Less than 0.2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood nmol/L</td>
<td>Less than 0.33</td>
<td>1</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Reference</th>
<th>Urine nmol/L</th>
<th>Less than 2.4</th>
<th>2,3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>nmol/24 h</td>
<td>Less than 2.7</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>nmol/mmol creatinine</td>
<td>Less than 0.2</td>
<td>4,5,6</td>
</tr>
</tbody>
</table>

**Notes**

**References**


**Clinical**

High tensile strength beryllium alloys, resistant to corrosion, vibration and shock, are used extensively in the aerospace industry. Beryllium alloys and ceramics are used in electronic components and in nuclear reactors.

**Toxicity**

Beryllium is one of the most toxic metals and has an extremely low occupational exposure limit. Acute exposures to high levels of beryllium can cause inflammation of the entire respiratory tract and at lower levels exposure to airborne beryllium particulate can cause an immune system response known as beryllium sensitisation. Sensitised individuals can go on to develop chronic beryllium disease, a debilitating and potentially fatal lung disease characterised by granuloma lesions in the lungs with symptoms such as breathlessness, cough, chest pain, and consequent fatigue, weakness and weight loss. Effects on the lymph nodes, skin and other target organs have also been reported with the majority of these presenting as contact dermatitis and skin
Beryllium and beryllium compounds are classified by International Agency for Research on Cancer as carcinogenic (class 1) to humans (IARC 2012).

**Laboratory Indices of Exposure**
Beryllium is measured in urine.

1. **References:**

