DIN - Material - No. 1.3247
Code S 2-10-1-8
Comparable standards AISI: M42, EU: HS2-9-1-8

Chemical composition
<table>
<thead>
<tr>
<th>(Typical analysis %)</th>
<th>C</th>
<th>Cr</th>
<th>Mo</th>
<th>V</th>
<th>W</th>
<th>Co</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1.1</td>
<td>3.9</td>
<td>9.3</td>
<td>1.2</td>
<td>1.5</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Steel properties

Physical properties
- Thermal conductivity W/(m.K) at 20°C: 19
- Density g/cm³ at 20°C: 8.01
- Coefficient of linear thermal expansion: $10^{-6} \, \text{°C}^{-1}$

Applications
Die sinking cutters, Die block- and engraving milling cutters, tool bits for free-cutting, cold forming tools. Cold extrusion rams and tools for machining materials for the aviation industry such as titanium alloys.

Stress Relieving
Holding at approx 650°C for one hour.

Heat treatment
- Soft annealing C: 820 - 880
- Cooling: furnace
- Hardness HB: 230 - 300

Heat up
- C: 430 - 600
- C: 950

Preheating
- 1. step: 1050
- 2. step: 1180 - 1210

Hardening from
- oil, air, thermal bath 550°C

Tempering
- C: 200 - 300
- HRC: 62.5
- Time: 3 x 1 hour
- As tempered hardness HRC: 55 - 58

Transformation Temperatures
$A_c_1 = 780\,^\circ\text{C}$, $A_c_2 = 855\,^\circ\text{C}$