Nickel Silver
NX13

Material Designation

<table>
<thead>
<tr>
<th>DIN-EN Symbol</th>
<th>DIN-EN</th>
<th>UNS</th>
<th>JIS</th>
<th>Abbreviation Sundwig</th>
<th>The Miller Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>CuNi12Zn25Pb1</td>
<td>CW404I</td>
<td>C79200</td>
<td>-</td>
<td>CuNi13Zn24Pb1</td>
<td>C792</td>
</tr>
</tbody>
</table>

Nominal Composition (mass content in %)

- Cu: Balance
- Zn: 24
- Ni: 13
- Pb: 1

Typical Applications

- Security keys

About the Alloy

NX13 – a special nickel silver – is mainly used for security keys. It is preferred for the production of keys due to the following properties:

- Excellent punching quality and good stampability
- Particularly good machinability
- Optimum strength properties
- Very good corrosion resistance

At the request of the customer or the type of application NX13 is produced in the tempers HB160 and HB170; other tempers are possible and can be supplied on request.

Mechanical Properties

<table>
<thead>
<tr>
<th>Zustand</th>
<th>Rm MPa</th>
<th>Rp0.2 MPa</th>
<th>A50 %</th>
<th>HB</th>
<th>Hv</th>
</tr>
</thead>
<tbody>
<tr>
<td>R350 soft</td>
<td>350 - 450</td>
<td>&lt; 300</td>
<td>&gt; 25</td>
<td>85 - 115</td>
<td>90 - 125</td>
</tr>
<tr>
<td>R450 H01</td>
<td>450 - 520</td>
<td>&gt; 310</td>
<td>&gt; 12</td>
<td>115 - 150</td>
<td>125 - 160</td>
</tr>
<tr>
<td>R500 H02</td>
<td>500 - 600</td>
<td>&gt; 450</td>
<td>&gt; 5</td>
<td>145 - 170</td>
<td>155 - 185</td>
</tr>
<tr>
<td>R600 H04</td>
<td>600 - 710</td>
<td>&gt; 580</td>
<td>&gt; 2</td>
<td>170 - 190</td>
<td>185 - 210</td>
</tr>
<tr>
<td>R670 H06</td>
<td>&gt; 670</td>
<td>&gt; 650</td>
<td>-</td>
<td>&gt; 180</td>
<td>&gt; 200</td>
</tr>
</tbody>
</table>

In the case of key blanks the hardness value is referred to the strip before punching.

For key blanks the tempers HB160 or HB170 are preferred.

HB160 - 180 and HB170 - 190 are restricted special grades for key blanks.

Delivery Range of Semi-Finished Products

<table>
<thead>
<tr>
<th>Strip</th>
<th>Key blanks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 - 2.6 mm</td>
<td>Punched according to customer’s drawing using our own or customer-supplied tools.</td>
</tr>
<tr>
<td>2.6 - 3.5 mm</td>
<td>In cooperation with a sub-supplier, we also supply blanks in processed form.</td>
</tr>
</tbody>
</table>

Your Local Contact Person

Europe

- Sundwiger Messingwerk GmbH & Co. KG
  - Hönnetalstraße 110
  - 58675 Hemer
  - Germany
  - Phone: +49 2372 661-100
  - Fax: +49 2372 661-48100
  - E-Mail: michael.koehler@diehl.com
  - www.diehl.com/metall

USA

- The Miller Company
  - 275 Pratt Street
  - CT 06450 Meriden
  - USA
  - Phone: +1 203 63969-02
  - Fax: +1 203 63969-24
  - E-Mail: sales-meriden@diehl.com
  - www.diehl.com/metall

Asia

- Diehl Metall (Shenzhen) Co. Ltd.
  - 5F, Block 25, Shatoujiao Free Trade Zone
  - 518081 Shenzhen
  - P.R. of China
  - Phone: +86 755 2235 7466
  - Fax: +86 755 25260974
  - E-Mail: sales-shenzhen@diehl.com
  - www.diehl.com/metall

The information given in this material data sheet, which in any case provides no guarantee of particular characteristics, has been compiled to the best of our knowledge but is given without any obligation on our part. Our liability is determined solely by the individual contract terms, in particular by our general conditions of sale.

We reserve the right to make alterations especially where necessitated by technical developments or changes in availability.

Please ask for the latest edition of this material data sheet.