Märker® DCM
DCM-ESU

MATERIAL DATA SHEET

Hot Working Steel

Material-No.: 1.2343
EN ISO 4957-Abbreviation: X37CrMoV5-1
AISI: H 11
Material data sheet 1.2343

Märker® DCM – Material-No. 1.2343

Chemical composition:

<table>
<thead>
<tr>
<th></th>
<th>Standard values % (mass fraction)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C</td>
</tr>
<tr>
<td></td>
<td>0.38</td>
</tr>
</tbody>
</table>

Characteristics:
CrMoV-based hot-working tool steel with good hot strength, temper resistance and high hot toughness. Standard material for many hot-working tools. For highest requirements “Electro Slag Remelted” ESR material is recommended.

Applications:
Extrusions tools, particularly for light metals, including liners, extrusion stems, mandrels, pressure pads, liner holders, container mantles, die holders and extrusion dies; pressure die-casting moulds for light metal; forging tools, including dies and dies inserts.

Heat treatment:
- Soft annealing: 800-830 °C – cooling in furnace
- Annealing hardness: max. 230 HB
- Stress relieve annealing: 650 °C / cooling in furnace
- Hardening: 1000-1040 °C / air, oil or hot bath of approx. 500 °C
- Tempering: min. 2x, see tempering graph

Physical properties:

<table>
<thead>
<tr>
<th></th>
<th>Coefficient of thermal expansion:</th>
</tr>
</thead>
<tbody>
<tr>
<td>at °C</td>
<td>20-100 °C</td>
</tr>
<tr>
<td>[10^-6 m/(m·K)]</td>
<td>11.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Thermal conductivity:</th>
</tr>
</thead>
<tbody>
<tr>
<td>at °C</td>
<td>20 °C</td>
</tr>
<tr>
<td>[W/m · K]</td>
<td>25.3</td>
</tr>
</tbody>
</table>

- Density: 7.85 g / cm³
- Elastic modulus: $216 \times 10^6$ MPa at 20 °C
- Electric resistivity: $0.52 \, \Omega \cdot \text{mm}^2 / \text{m}$ at 20 °C
Information provided on material quality and recommendations for use are intended as a reference only. Such information is based on practical experience as well as on findings obtained through our research and development work. Although all specifications concerning the characteristics and applications mentioned in this data sheet occur to the best of our knowledge, liability has to be excluded.
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Contact
schleuderguss@schmidt-clemens.de
Phone: +49 2266 92-258
Fax: +49 2266 92-369

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Contact
ssp@schmidt-clemens.de
Phone: +49 2266 92-413
Fax: +49 2266 92-338

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Contact
maerker@schmidt-clemens.de
Phone: +49 2266 92-211
Fax: +49 2266 92-477

S+C Bowers & Jones Ltd.
Patrick Gregory Road, Wednesfield
Wolverhampton WV11 3DU, United Kingdom
Phone: +44 1902 732-110 · Fax: +44 1902 864654
E-Mail: info@bowersjones.co.uk
Internet: www.bowersjones.com

S+C MÄRKER GmbH
Kaiseru 2 · 51789 Lindlar, Germany
Phone: +49 2266 92-211 · Fax: +49 2266 92-477
E-Mail: maerker@schmidt-clemens.de
Internet: www.sc-maerker.de
P. O. Box 1140, 51779 Lindlar, Germany