Sintered NdFeB Magnets’ Specifications

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### Table 1  Sintered NdFeB Grades and Their Magnetic Properties

<table>
<thead>
<tr>
<th>Grade</th>
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<th>$H_{cb}$</th>
<th>$H_{cj}$</th>
<th>(BH)$_{max}$</th>
<th>$T_w$</th>
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<td>kA/m</td>
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Note:
* The data in the above table were samples’ results tested at the temperature of 20 °C.
* The temperature coefficients of $B_r$ and $H_{cj}$ are $\alpha(B_r)$: -0.09~0.12 %/°C and $\beta(H_{cj})$: -0.40~0.60 %/°C, respectively.
* The above data are only for reference, magnets can be tailored according to customers’ personalized requirements.
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<th>Graphic Description</th>
<th>Magnetization Direction</th>
<th>Size Range</th>
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<td>T: 0.3-100 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Diametrically Magnetized</td>
<td>D: 1-100 mm</td>
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<td><img src="image" alt="Ring" /></td>
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<td>OD: 1.5-100 mm</td>
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<td>OD: 20-200 mm</td>
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<td>L: 1-160 mm</td>
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<td>W: 3-100 mm</td>
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<td>H: 1-10 mm</td>
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Note:
* Other shapes of sintered NdFeB magnets can also be tailored according to customers’ specific requirements.
Table III Sintered NdFeB Magnets’ Coating Types

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<th>Thickness (μm)</th>
<th>SST (hr)</th>
<th>PCT (hr)</th>
<th>T_w (ºC)</th>
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<td>C-Zn (Colored Zinc)</td>
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<td>&gt;48</td>
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<td>&gt;96</td>
<td>&gt;72</td>
<td>≤230</td>
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<td></td>
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<td>&gt;48</td>
<td>&gt;72</td>
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<td>&gt;48</td>
<td>≤160</td>
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<td>&gt;48</td>
<td>&gt;48</td>
<td>≤230</td>
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<td>&gt;48</td>
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<td>&gt;72</td>
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Note:
* Salt spray test (SST) was conducted at 35 ºC with 5% NaCl solution.
* Pressure cooker test (PCT) was conducted at 120 ºC, 2 atm and 100% RH.

Table IV Some Physical Properties of Sintered NdFeB Magnets

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<th>Parameter</th>
<th>Unit</th>
<th>Value</th>
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<td>Vickers Hardness (HV)</td>
<td>MPa</td>
<td>500-600</td>
</tr>
<tr>
<td>Bending Strength (σbb)</td>
<td>MPa</td>
<td>200-400</td>
</tr>
<tr>
<td>Compressive Strenght (σbc)</td>
<td>MPa</td>
<td>1000-1100</td>
</tr>
<tr>
<td>Tensile Strength (σt)</td>
<td>MPa</td>
<td>80-90</td>
</tr>
<tr>
<td>Resistivity (ρ)</td>
<td>μΩ·m</td>
<td>1.4-1.6</td>
</tr>
<tr>
<td>Thermal Conductivity (λ)</td>
<td>W/(m·K)</td>
<td>8-10</td>
</tr>
<tr>
<td>Young's Modulus (E)</td>
<td>GPa</td>
<td>150-200</td>
</tr>
<tr>
<td>Thermal Expansivity // Magnetization (α∥)</td>
<td>10⁻⁶/ºC</td>
<td>3-4</td>
</tr>
<tr>
<td>Thermal Expansivity ⊥ Magnetization (α⊥)</td>
<td>10⁻⁶/ºC</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Note:
* The above data are only for reference, specific magnets maybe have different values.