Carbonyl Iron Powder for Metal Injection Molding
ADVANTAGES OF CIP BY BASF

CARBONYL IRON POWDER FOR METAL INJECTION MOLDING

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CARBONYL IRON POWDER (CIP) is a key raw material for Metal Injection Molding (MIM). The unique fineness of CIP makes it easily compoundable with high load. It provides high-density, excellent strength and surface texture quality in the sintered part. CIP's uniform spherical particle shape generates a high flowability and facilitates high accuracy to size in the final part. Using CIP helps to precisely control the carbon-oxygen ratio of the feedstock.

BASF’S CIP GRADES

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BASF’s CIP OS and OM grades are the CIP grades mostly used for MIM applications. They offer excellent sintering properties and outstanding batch-to-batch consistency. CIP OS is additionally silicon-coated to improve the flowability of the feedstock.

CIP CC is a hydrogen-reduced grade with very low carbon and nitrogen content. It is widely applied in combination with OS or OM in order to adjust the carbon-oxygen ratio of the feedstock.

Our specialty H grades are employed when highest demands need to be met. The extraordinary fineness of CIP H grades provides high density and surface texture quality in micro MIM parts.

Typical Properties

<table>
<thead>
<tr>
<th>Grade</th>
<th>Fe min. (%)</th>
<th>C max. (%)</th>
<th>N max. (%)</th>
<th>O max. (%)</th>
<th>d10 (mic.)</th>
<th>d50 (mic.)</th>
<th>d90 (mic.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEP CM</td>
<td>97.8</td>
<td>0.75–0.90</td>
<td>0.65–0.90</td>
<td>0.15–0.40</td>
<td>1.7–2.7</td>
<td>3.9–5.2</td>
<td>7.2–9.2</td>
</tr>
<tr>
<td>CEP CS</td>
<td>97.5</td>
<td>0.7–0.9</td>
<td>0.5–0.9</td>
<td>0.6–0.9</td>
<td>1.4–2.4</td>
<td>3.4–4.4</td>
<td>5.4–8.4</td>
</tr>
<tr>
<td>CEP CC</td>
<td>99.5</td>
<td>0.05</td>
<td>0.01</td>
<td>0.18–0.35</td>
<td>1.7–2.7</td>
<td>3.8–5.3</td>
<td>6.5–10.0</td>
</tr>
<tr>
<td>CEP HF</td>
<td>97.7</td>
<td>0.9</td>
<td>0.9</td>
<td>0.3</td>
<td>1.2</td>
<td>2.5</td>
<td>3.5</td>
</tr>
<tr>
<td>CEP HQ</td>
<td>97.8</td>
<td>0.6–0.9</td>
<td>0.6–0.9</td>
<td>0.3–0.5</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>CEP HS</td>
<td>97.5</td>
<td>1</td>
<td>1</td>
<td>0.5</td>
<td>1.8–2.3</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

With precisely controlled properties, our well-known high-quality CIP grades contribute to superior MIM parts. BASF’s excellent batch-to-batch consistency helps our customers to efficiently run their production processes.
Please contact us to discuss the requirements of your CIP application.

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