P304L Stainless Steel

DESCRIPTION

P304L is a corrosion resistant material that exhibits good property stability below 1000°F. P304L is often the most practical stainless steel choice for parts that need the benefit of an austenitic grade. P304L exhibits better overall corrosion resistance than 303L.

This material is a good choice for parts that will not be subjected to demanding machining operations. A major benefit of this material is the balance of good material performance and economical cost.

<table>
<thead>
<tr>
<th>PRODUCT</th>
<th>POWDER PROPERTIES</th>
<th>COMPACTING PRESSURE (TSI)</th>
<th>GREEN STRENGTH (PSI)</th>
<th>GREEN DENSITY (GM/CC)</th>
<th>SINTERED DENSITY (GM/CC)</th>
<th>SINTERED BREAKING STRENGTH (PSI)</th>
<th>DIMENSIONAL CHANGE FROM DIE SIZE (%)</th>
<th>UTS (PSI)</th>
<th>% ELONG</th>
<th>RB HARDNESS (APARENT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P304L</td>
<td>2.7 DENSITY (GM/CC)</td>
<td>FLOW SEC./5G</td>
<td>30</td>
<td>40</td>
<td>50</td>
<td>410</td>
<td>900</td>
<td>1120</td>
<td>6.25</td>
<td>6.50</td>
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Compacting properties were measured on powder blended with 1% lithium stearate. Sintering was done in dissociated ammonia at 2050°F for 45 minutes.
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POWDER PROPERTIES

Chemical Composition
Chromium: 18-20%
Nickel: 8-12%
Manganese: 2% max
Silicon: 1% max
Carbon: 0.03% max
Sulfur: 0.03% max
Phosphorus: 0.045% max
Iron: Balance

Physical Properties
Apparent Density: 2.8 g/cm³
Flow Rate: 30 sec/50g

SINTERED PROPERTIES

Sintered properties were determined using test specimens that were sintered for 45 minutes in dissociated ammonia with a -40°F dew point.

- Tensile Strength
- Ultimate Tensile Strength
- Ductility
- Dimensional Change