Tolerances are -0/+ indicated value. Note: Other tolerances upon enquiry

**Length Tolerance**

- **Cold rolled plates, strips, coils and blanks**
  - Hot rolled products
  - Cold rolled products

**Thickness Tolerances**

- **Cold rolled plates, strips, coils and blanks**
- **Hot rolled products**

**Width Tolerance**

- **Cold rolled strips and blanks**
- **Hot rolled products**

**Surface Finishing**

- **Aperam**
  - **Steel Grade**
  - **Thickness (mm)**: 0.40 - 3,50
  - **Width (mm)**: 1000 - 1540
  - **Length (mm)**: 1000 - 6100

**Dimensions**

- **Steel Grades**
  - 304/304L
  - K39MD
  - 301LN
  - 2205
  - 2304
  - 310S
  - 301
  - 317
  - 321
  - 347
  - K03
  - K30
  - K44

**Stainless steel and sustainable development: a perfect combination**

Stainless steel from Aperam South America perfectly meets the requirement of sustainable development, which has become a major priority for businesses, customers and society as a whole. The material is also recognized for its aesthetic qualities and technical performance. Therefore, stainless steel proves to be suitable for modern needs.

**Endlessly recyclable**

Being an endlessly recyclable material, stainless steel is an "ecological miracle" by excellence. At this moment, the majority of Aperam’s worldwide production comes from its own recycling practices, which contribute to the conservation of our renewable resources.

**Ideal quality to health**

In its Equi-Equivalence and after maintenance, stainless steel covers the most rigorous requirements related to human health.

**Incomparable visual aspect**

Having an extraordinary appearance and large variety of surface finishes, stainless steel is an aesthetically unique material.

**Excellent technical performance**

In its corrosion resistance, large variety of mechanical properties and ease of processing, make stainless steel a material of choice recommended to several market sectors.

**KARA, synonym of intelligence and performance**

Aperam has recognized experience in ferritic stainless steels. Ahead of its competitors, the Company carries out finishing innovations in order to offer high performance matrices, suitable to modern-day needs.

KARA line of products offers the same advantages as all other grades of stainless steels in addition to other specify and material properties.

**KARA products are appreciated because they are hard-wearing and durable qualities and have intelligence and performance.**

**Remarks**

- **A different way to think stainless steel**
- **KARA stainless steel**
- **KARA products’ characteristics**
- **KARA products’ benefits**
- **KARA products’ quality guarantee**
- **KARA products’ commitment**
- **KARA products’ environmental sustainability**

**Key for value**

- **A peramic products with ground finish and polished finishing, the exclusivity offered to our type of finishing may not be better than the customers’ expectations.**
- **Sustainable material:**
  - **Environmentally friendly:**
  - **Ergonomically friendly:**

**Inert, hypoallergenic and of easy maintenance, stainless steel meets the most rigorous requirements related to health and hygiene.**

**Ideal quality to health**

**Endlessly recyclable**

**Incomparable visual aspect**

**Excellent technical performance**

**KARA, synonym of intelligence and performance**

**Remarks**

- **A different way to think stainless steel**
- **KARA stainless steel**
- **KARA products’ characteristics**
- **KARA products’ benefits**
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**Key for value**

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- **Sustainable material:**
  - **Environmentally friendly:**
  - **Ergonomically friendly:**
### Chemical Composition (weight percentage) (3)

<table>
<thead>
<tr>
<th>Designation</th>
<th>AISI UNS</th>
<th>C</th>
<th>Mn</th>
<th>Si</th>
<th>P</th>
<th>S</th>
<th>Cr</th>
<th>Ni</th>
<th>Mo</th>
<th>N</th>
<th>OTHERS</th>
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<tbody>
<tr>
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<td>0.03</td>
<td>2.00</td>
<td>0.75</td>
<td>0.045</td>
<td>0.015</td>
<td>17.5 to 19.5</td>
<td>9.0 to 10.5</td>
<td>-</td>
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<tr>
<td>P304T</td>
<td>S30409</td>
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<td>0.04 to 0.10</td>
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<td>0.75</td>
<td>0.045</td>
<td>0.03</td>
<td>18.0 to 20.0</td>
<td>8.0 to 10.5</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>P498V</td>
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<td>1.4116</td>
<td>0.45 to 0.55</td>
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<td>1.00</td>
<td>0.04</td>
<td>0.015</td>
<td>14.0 to 14.5</td>
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<td>-</td>
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<tr>
<td>P347A / H</td>
<td>S34709</td>
<td>-</td>
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<td>0.03</td>
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<td>9.0 to 13.0</td>
<td>3.0 to 4.0</td>
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<td>2.00</td>
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<td>0.045</td>
<td>0.03</td>
<td>18.0 to 20.0</td>
<td>11.0 to 15.0</td>
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<tr>
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<td>0.045</td>
<td>0.03</td>
<td>16.5 to 18.0</td>
<td>10.0 to 13.0</td>
<td>2.00 to 2.50</td>
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</tr>
<tr>
<td>K09M / K44</td>
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<td>0.03</td>
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<td>0.035</td>
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<td>10.50 to 11.7</td>
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<tr>
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<td>10.50 to 11.7</td>
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<td>-</td>
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<tr>
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<tr>
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<td>0.045</td>
<td>0.015</td>
<td>16.5 to 18.0</td>
<td>10.0 to 13.0</td>
<td>2.00 to 2.50</td>
<td>0.10</td>
</tr>
<tr>
<td>K09M / K44</td>
<td>S40920</td>
<td>-</td>
<td>0.03</td>
<td>1.00</td>
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<td>0.035</td>
<td>0.015</td>
<td>10.50 to 11.7</td>
<td>0.50</td>
<td>-</td>
<td>0.03</td>
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<tr>
<td>K09 / K03</td>
<td>S40910</td>
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<td>1.00</td>
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<td>0.035</td>
<td>0.015</td>
<td>10.50 to 11.7</td>
<td>0.50</td>
<td>-</td>
<td>0.03</td>
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<tr>
<td>K41</td>
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<td>1.4521</td>
<td>0.025</td>
<td>1.00</td>
<td>1.00</td>
<td>0.04</td>
<td>0.03</td>
<td>17.5 to 18.5</td>
<td>1.00</td>
<td>1.75 to 2.50</td>
<td>0.035</td>
</tr>
</tbody>
</table>

### Physical properties

<table>
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<tr>
<th>Designation</th>
<th>Density (g/cm³)</th>
<th>Brinell limit (MPa)</th>
<th>Rockwell - B</th>
<th>Hardness (°C)</th>
<th>Cold bending</th>
<th>Erichsen cup test</th>
</tr>
</thead>
<tbody>
<tr>
<td>P304A / B</td>
<td>7.80</td>
<td>450</td>
<td>13,5</td>
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<td>Magnetic</td>
<td>800</td>
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<td>P304T</td>
<td>7.80</td>
<td>460</td>
<td>13,5</td>
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<td>800</td>
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<td>P498V</td>
<td>8.00</td>
<td>500</td>
<td>16,5</td>
<td>1375</td>
<td>Annealed</td>
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<td>P347A / H</td>
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<td>800</td>
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<tr>
<td>P399B</td>
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<td>460</td>
<td>13,5</td>
<td>1465</td>
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<tr>
<td>K09M / K44</td>
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<td>450</td>
<td>13,5</td>
<td>1465</td>
<td>Magnetic</td>
<td>800</td>
</tr>
</tbody>
</table>

### Applications

- **Civil construction and architecture:** sugar plants, water tanks, household water heaters, applications in chemical and petrochemical industries.
- **Chemical/petrochemical industries and pulp/paper manufacturing industries:** capacitors for electric-power generating stations based on fossil and nuclear fuels.
- **Equipment intended for the industries:** aeronautical, railway, shipbuilding, chemical and petrochemical, pharmaceutical, cosmetic, textile, rubber, paints, dairy, hospital.
- **Equipment intended for the industries:** aeronautical, railway, shipbuilding, petrochemical, pulp and paper, textile, cold-store/refrigeration, hospital, food processing, dairy, pharmaceutical, cosmetic, chemical.

Note: The table and text provide a detailed view of the chemical composition and physical properties of various stainless steel grades. The applications listed are typical uses in various industries. The table includes elements such as carbon, manganese, silicon, phosphorus, sulfur, chromium, nickel, molybdenum, nitrogen, and others, along with specific ranges for each element. The physical properties section includes density, Brinell limit, Rockwell hardness, cold bending, and Erichsen cup test results, among other measurements.
The information contained in this publication were obtained from laboratory results and from traditional and reputable bibliographical references.

The performance of the stainless steel may suffer alterations due to change in temperature, pH, contamination contents and also due to the state of conservation of the equipment used for welding and mechanical forming.

For these reasons, the information contained in this publication shall be used as an initial reference for trials or final specification by the buyer.

Aperam South America shall not be liable for losses or damages resulting from improper use of the information hereto.