2205 DUAL PHASE STAINLESS STEEL

ASTM/ASME …..UNS S31803, S32205, SAF 2205
EURONORM …..W.Nr 1.4462, X2CrNiMoN 22.5.3
NACE MR0175

PRODUCTS OF 2205 AVAILABLE @KAYSUNS

- Butt welded Fittings to ASME B16.9, MSS SP-43, EN 10253-3, EN 10253-4 etc.
- Pipe & Tube to ASTM SA790, SA789, EN 10216-5 etc.
- Socket and Threaded Fittings to ASME B16.11, BS 3799, MSS SP97
- Flange and Special Forgings to ASME B16.9, ASME B16.47, B16.48, EN 1092-1

GENERAL PROPERTIES

Duplex 2205 is a two-phase, ferritic, austenitic 22% chromium, 3% molybdenum, 5 to 6% nickel alloyed stainless steel. It is the most widely used duplex stainless steel grade and is characterized by high yield strength, double that of the standard austenitic stainless steel grades. It also demonstrates good fatigue strength, as well as outstanding resistance to stress corrosion cracking, crevice, pitting, erosion, and general corrosion in severe environments.

CHEMICAL COMPOSITION

<table>
<thead>
<tr>
<th>C</th>
<th>Si</th>
<th>Mn</th>
<th>P</th>
<th>S</th>
<th>Cr</th>
<th>Ni</th>
<th>Mo</th>
<th>N</th>
<th>Ti</th>
<th>PREN</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.030</td>
<td>1.00</td>
<td>2.00</td>
<td>0.030</td>
<td>0.020</td>
<td>22.0-23.0</td>
<td>4.50-6.50</td>
<td>3.00-3.50</td>
<td>0.14-0.20</td>
<td>-</td>
<td>≳ 34</td>
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ASTM SPECIFICATION

<table>
<thead>
<tr>
<th>Pipe Smls&amp;Welded</th>
<th>Tube Smls&amp;Weld</th>
<th>Sheet/Plate</th>
<th>Forgings</th>
<th>Castings</th>
<th>Weld Fittings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A790</td>
<td>A789</td>
<td>A240</td>
<td>A182</td>
<td>A890</td>
<td>A815</td>
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</tbody>
</table>

MECHANICAL PROPERTIES PARAMETER OF ASTM A790

<table>
<thead>
<tr>
<th>Tensile Strength, Min. MPA</th>
<th>0.2% Yield Strength, Min. MPA</th>
<th>Hardness Max. (HRC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>655</td>
<td>450</td>
<td>30</td>
</tr>
</tbody>
</table>

CHARACTERISTICS OF DUPLEX 2205

- High resistance to chloride stress corrosion cracking
- Resistance to chloride pitting and crevice corrosion
- Stress corrosion cracking (especially chloride stress corrosion cracking)
- Good sulfide stress corrosion resistance
- High strength

APPLICATIONS OF DUPLEX 2205

- Chemical process vessels, piping and heat exchangers
- Pulp mill digesters, bleach washers, chip pre-steaming vessels
- Sea water treatments
- Oil field piping and heat exchangers
- Flue gas desulfurization equipments