Nickel Alloy Wire

Alloy: WWNA99  
Conforms to Certification: AWS A5.15
Class: ERNi-CI  
ASME SFA A5.15

Alloy: ERNi-CI  (Alloy NA99)
Weld Process: GMAW, GTAW Welding Processes

AWS Chemical Composition Requirements
C = 0.1 max  Si = 0.10 max
Mn = 0.30 max  Cu = 0.20 max
Fe = 0.20 max  Ni = 99.2 min
S = 0.01 max  P = 0.01 max

Deposited All Weld Metal Properties % (AW)
Tensile Strength  70,000psi
Yield Strength  36,000psi
Elongation  40%

Deposited Chemical Composition % (Typical)
C = 0.01  S = 0.002  Ni = 99.62
Mn = 0.17  Cu = 0.13  Fe = 0.01
Si = 0.05  P = 0.001

Deposited Charpy-V-Notch Impact Properties %
Not applicable

Application
ERNi-CI Nickel Alloy 99 classification is used for tig and mig welding of cast irons. Major use is the repair of gray iron castings. The welds are easy to machine.

Recommended Welding Parameters for TIG and MIG Welding of Nickel Alloys

<table>
<thead>
<tr>
<th>Process</th>
<th>Diameter of Wire</th>
<th>Voltage (V)</th>
<th>Amperage (A)</th>
<th>Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tig</td>
<td>.035 inches x 36</td>
<td>12 - 15</td>
<td>60 - 90</td>
<td>100% Argon</td>
</tr>
<tr>
<td></td>
<td>.045 inches x 36</td>
<td>13 - 16</td>
<td>80 - 110</td>
<td>100% Argon</td>
</tr>
<tr>
<td></td>
<td>1/16 inches x 36</td>
<td>14 - 18</td>
<td>90 - 130</td>
<td>100% Argon</td>
</tr>
<tr>
<td></td>
<td>3/32 inches x 36</td>
<td>15 – 20</td>
<td>120 - 175</td>
<td>100% Argon</td>
</tr>
<tr>
<td></td>
<td>1/8 inches x 36</td>
<td>15 – 20</td>
<td>150 - 220</td>
<td>100% Argon</td>
</tr>
<tr>
<td>MIG</td>
<td>.035 inches</td>
<td>26 – 29</td>
<td>150 – 190</td>
<td>75% Argon + 25% Helium</td>
</tr>
<tr>
<td></td>
<td>.045 inches</td>
<td>28 – 32</td>
<td>180 – 220</td>
<td>75% Argon + 25% Helium</td>
</tr>
<tr>
<td></td>
<td>1/16 inches</td>
<td>29 – 33</td>
<td>200 - 250</td>
<td>75% Argon + 25% Helium</td>
</tr>
</tbody>
</table>

Note: Other shielding Gases may be used for Mig and Tig welding. Shielding gases are chosen taking Quality, cost, and Operability into consideration.