



## Material - ASME SB 163 N04400

Standard Specification for Seamless Nickel and Nickel Alloy Condenser and Heat-Exchanger Tubes

**Group - Non-Ferrous Nickel Alloys** 

Sub Group - ASME SB 163 N04400 Seamless Nickel and Nickel Alloy Condenser and Heat-Exchanger Tubes Application - Intended for Valve, Pump, General Engineering, Automotive and other Industries Grade Belongs to the Industry - Tube

| Chemical Composition |      |                 | Heat Treatment                       |                 |
|----------------------|------|-----------------|--------------------------------------|-----------------|
| Carbon               | C %  | 0.300 max.      |                                      |                 |
| Silicon              | Si % | 0.500 max.      |                                      |                 |
| Manganese            | Mn % | 2.000 max.      |                                      |                 |
| Copper               | Cu % | 28.000 - 34.000 | As-Cast or Annealing or Age Hardning | or Age Hardning |
| Sulphur              | S %  | 0.024 max.      |                                      |                 |
| Iron                 | Fe % | 2.500 max.      |                                      |                 |
| Nickel               | Ni % | 63.000 min.     |                                      |                 |
| -                    | -    | -               |                                      |                 |
| -                    | -    | -               | Mechanical Properties                |                 |
| -                    | -    | -               | Tensile Strength in Mpa              | 483 - 621       |
| -                    | -    | -               | Yield Strength in Mpa                | 193 min.        |
| -                    | -    | -               | Elongation in %                      | 3 min.          |
| -                    | -    | -               | Reduction of Area in %               | -               |
| -                    | -    | -               | Hardness in HRC                      | 75 - 97         |
| -                    | -    | -               | Impact in Joule                      | -               |

| Cross Reference Table |          |         |                              |  |
|-----------------------|----------|---------|------------------------------|--|
| Material              | Standard | Country | Grade Belong to the Industry |  |
| B 163 N04400          | ASTM     | USA     | Tube                         |  |
| B 127 N04400          | ASME     | USA     | Plate, Sheet and Strip       |  |
| N04400                | UNS      | USA     | Tube                         |  |
| Monel 400             | SAE      | USA     | Sheet, Strip and Plate       |  |
| B 164 N04400          | ASTM     | USA     | Rod, Bar and Wire            |  |
| NW4400                | JIS      | Japan   | Plate, Sheet and Strip       |  |
| B 165 N04400          | ASTM     | USA     | Pipe and Tube                |  |

Further any inquiry to discuss with Gravity Cast Pvt. Ltd. – Gravity Group of Companies team member Call on +918469160029, or email marketing@gravitycastindia.com

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