

**TECHNICAL INFORMATION**

**STAINLESS STEEL DIN 1.4541(V2A) , AISI 321 SPECIFICATION**

| <b>COMPOSITION</b>   |                   |             |                      |
|--|-------------------|-------------|----------------------|
| C – 0,08% , Fe – 68% , Cr – 18% , Ni – 11% , Mn – 2% , P – 0,045% , S – 0,03% , Si – 1% , Ti – 0,15%   |                   |             |                      |
| <b>DESCRIPTION</b>   |                   |             |                      |
| Titanium – bearing , austenitic , chromium – nickel steel . Stabilized against carbide precipitation and designed to work within the temperature range where carbide precipitation develops . Ti content helps prevent chromium carbide precipitation resulting from welding or elevated temperatures . Stabilized at annealing temperatures between 950 ± 1010 °C.<br>Resist scaling and vibration fatigue. Application include aircraft exhaust stacks and manifolds , chemical processing equipment, weld equipment ,jet engine parts . |                   |             |                      |
| <b>PHISICAL PROPERTIES</b>   |                   |             |                      |
| Property   | Unit              | Value       | Comments             |
| Density  | g/cm <sup>2</sup> | 8           |                      |
| <b>MECHANICAL PROPERTIES</b>   |                   |             |                      |
| Hardness   | Rockwell B        | 80          |                      |
| Tensile Strength , Ultimate  | MPa               | 620         |                      |
| Tensile Strength , Yield   | MPa               | 240         |                      |
| Elongation at Break  | %                 | 45          | in 50 mm             |
| Modulus of Elasticity  | GPa               | 193 ±200    |                      |
| Charpy Impact  | J                 | 165         | v-notch              |
| Izod Impact  | J                 | 135         |                      |
| <b>ELECTRICAL PROPERTIES</b>   |                   |             |                      |
| Electrical Resistivity   | ohm · cm          | 7.2 e- 0,05 | at 20 °C             |
| Magnetic Permeability  |                   | 1.008       | at RT                |
| <b>THERMAL PROPERTIES</b>  |                   |             |                      |
| CTE linear 500° C  | µm / m · °C       | 18,5        | 0-540 °C             |
| Heat Capacity  | J / g · °C        | 0,5         | from 0 – 100 °C      |
| Thermal Conductivity   | W / m · K         | 16,1        | 100 °C               |
| Melting point  | °C                | 1400 - 1425 |                      |
| Maximum service Temperatures , Air   | °C                | 870         | Continuous Service   |
| Maximum service Temperatures , Air   | °C                | 925         | Intermittent Service |

**SUGGESTED APPLICATION**

| CORRODENT                           | TEMP. °C            | TEMP. °F | CONC.%  | CORRODENT                        | TEMP. °C             | TEMP. °F | CONC.% |
|-------------------------------------|---------------------|----------|---------|----------------------------------|----------------------|----------|--------|
| Acetone                             | 100                 | 212      | ALL     | Lacquers & Thinners              | 149                  | 300      | ALL    |
| Acetylene                           | 204                 | 400      |         | Linseed Oil                      | 24                   | 75       |        |
| Alcohols                            | 100                 | 212      | ALL     | Magnesium Hydroxide ( or Oxide ) | 24                   | 75       | ALL    |
| Ammonia Dry                         | 100                 | 212      | ALL     | Magnesium Sulfate                | 100                  | 212      | 40%    |
| Ammonium Hydroxide (Ammonia Aqua )  | 100                 | 212      | ALL     | Mercury                          | 371                  | 700      | 100%   |
| Asphalt                             | 121                 | 250      |         | Methylene Chloride               | 100                  | 212      | ALL    |
| Atmosphere (Industrial and Marine ) |                     |          |         | Methyl Chloride , Dry            | 24                   | 75       |        |
| Barium Compounds                    | SEE CALCIUM         |          |         | Milk , fresh or sour             | 82                   | 180      |        |
| Beer                                | 21                  | 70       |         | Molasses                         | SEE GLUCOSE          |          |        |
| Benzene ( Benzol )                  | 100                 | 212      |         | Natural Gas                      | 21                   | 70       |        |
| Butane                              | 204                 | 400      | ALL     | Nitric Acid                      | 24                   | 75       | ALL    |
| Butyl Alcohol                       | SEE ALCOHOLS        |          |         | Oxygen                           | 24                   | 75       | ALL    |
| Carbolic Acid                       | SEE PHENOL          |          |         | Oleic Acid                       | SEE FATTY ACIDS      |          |        |
| Carbonated Water                    | 100                 | 212      | ALL     | Photographic Bleaching           | 38                   | 100      | ALL    |
| Carbonated Beverages                | 100                 | 212      |         | Palmitic Acid                    | SEE FATTY ACIDS      |          |        |
| Carbon Disulfide                    | 93                  | 200      |         | Potassium Compounds              | SEE SODIUM COMPOUNDS |          |        |
| Cider                               | 149                 | 300      |         | Propane                          | 149                  | 300      |        |
| Copper Plating Solution (Cyanide )  | 82                  | 180      |         | Soap & Detergents                | 100                  | 212      | ALL    |
| Copper Plating Solution (Acid )     | 24                  | 75       |         | Sodium Bisulphite                | 100                  | 212      | 20%    |
| Corn oil                            | 93                  | 200      |         | Sodium Bisulphate                | 100                  | 212      | 20%    |
| Creosole                            | 93                  | 200      | ALL     | Salt or Brine                    | SEE SODIUM CHLORIDE  |          |        |
| Ethyl Acetate                       | SEE LACQUER THINNER |          |         | Sodium Cyanide                   | 100                  | 212      | ALL    |
| Ethyl Chloride Dry                  | 260                 | 500      |         | Sodium Nitrate                   | 100                  | 212      | 40%    |
| Ethanol                             | SEE ALCOHOLS        |          |         | Sodium Phosphate                 | 100                  | 212      | 10%    |
| Ethylene Glycol ( Uninhibited )     | 100                 | 212      | ALL     | Sodium Silicate                  | 100                  | 212      | 10%    |
| Ethylene Oxide                      | 24                  | 75       |         | Sodium Sulfite                   | 100                  | 212      | 30%    |
| Ferric Sulfate                      | 149                 | 300      | ALL     | Sodium Thiosulfate               | 100                  | 212      | ALL    |
| Freon                               | 149                 | 300      |         | Steam                            |                      |          |        |
| Fluorine , Anhydrous                | 38                  | 100      |         | Stearic Acid                     | SEE FATTY ACIDS      |          |        |
| Gasoline                            | 149                 | 300      |         | Sugar Solutions                  | SEE GLUCOSE          |          |        |
| Glucose                             | 149                 | 300      |         | Sulfur                           | 260                  | 500      |        |
| Glue ph 6-8                         | 149                 | 300      |         | Toluene                          | 24                   | 75       |        |
| Hydrogen Chloride , Dry             | 260                 | 500      |         | Varnish                          | 66                   | 150      |        |
| Hydrocyanic Acid                    | 100                 | 212      | ALL     |                                  |                      |          |        |
| Hydrogen Fluoride , Dry             | 79                  | 175      |         |                                  |                      |          |        |
| Hydrogen Peroxide                   | 52                  | 125      | 10-100% |                                  |                      |          |        |
| Kerosene                            | 149                 | 300      | ALL     |                                  |                      |          |        |