

## Material: ASTM A732 4A

**Standard Specification for Castings, Investment, Carbon and Low Alloy Steel for General Application, and Cobalt Alloy for High Strength at Elevated Temperatures**

**Group:** Ferrous Mild Steel Alloys

**Sub Group:** ASTM A732 / A7323M Casting, Investment, Carbon and Low Alloy Steel for General Application

**Application:** Intended for Valve, Pump, General Engineering, Automotive and Other Industries

**Grade Belongs to the Industry:** Casting

| Chemical Composition |      |               | Heat Treatment                                    |          |
|----------------------|------|---------------|---------------------------------------------------|----------|
| Carbon               | C %  | 0.450 - 0.550 | Annealing or Normalizing or Hardening + Tempering |          |
| Silicon              | Si % | 0.200 - 1.000 |                                                   |          |
| Manganese            | Mn % | 0.700 - 1.000 |                                                   |          |
| Phosphorus           | P %  | 0.040 max.    |                                                   |          |
| Sulphur              | S %  | 0.045 max.    |                                                   |          |
| Copper               | Cu % | 0.500 max.    |                                                   |          |
| Tungsten             | W %  | 0.100 max.    |                                                   |          |
| Other                | Ot % | 0.600 max.    |                                                   |          |
| Iron                 | Fe % | Balance       | Mechanical Properties                             |          |
| -                    | -    | -             | Tensile Strength in Mpa                           | 621 min. |
| -                    | -    | -             | Yield Strength in Mpa                             | 345 min. |
| -                    | -    | -             | Elongation in %                                   | 20 min.  |
| -                    | -    | -             | Reduction of Area in %                            | -        |
| -                    | -    | -             | Hardness in BHN                                   | -        |
| -                    | -    | -             | Impact in Joule                                   | -        |

| Cross Reference Table |          |         |                               |
|-----------------------|----------|---------|-------------------------------|
| Material              | Standard | Country | Grade Belong to the Industry  |
| 1050                  | AISI     | USA     | Forging, Bar, Wire, and Shape |
| 1606                  | SS       | Sweden  | Casting                       |
| 50 CD 4 M             | AFNOR NF | France  | Casting                       |
| 5152                  | SAE      | USA     | Steel                         |
| 735 A51               | BS       | British | Hot Formed Spring             |
| C3                    | MSZ      | Hungary | Steel                         |
| C48GW-N-A             | JIS      | Japan   | Forging                       |

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