

## Material - ASTM A 513 Grade 1022

**Standard Specification For Carbon Steel Compositions For Forging To Hot-Rolled And Cold-Finished Tubing**

**Group - Ferrous Mild Steel Alloys**

**Sub Group - ASTM A 513 Grade 1022 Carbon Steel Compositions For Forging To Hot-Rolled And Cold-Finished Tubing**

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

**Grade Belongs to the Industry - Tubing**

| Chemical Composition |      |               | Heat Treatment                                                                                                                                                                                                   |  |
|----------------------|------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Carbon               | C %  | 0.180 - 0.230 | As Raw or Annealing or Normalizing or Hardening and Tempering                                                                                                                                                    |  |
| Manganese            | Mn % | 0.700 - 1.000 |                                                                                                                                                                                                                  |  |
| Phosphorus           | P %  | 0.035 max.    |                                                                                                                                                                                                                  |  |
| Sulphur              | S %  | 0.035 max.    |                                                                                                                                                                                                                  |  |
| Iron                 | Fe % | Balance       |                                                                                                                                                                                                                  |  |
| -                    | -    | -             | <b>Mechanical Properties</b><br>Tensile Strength in Mpa 379 min.<br>Yield Strength in Mpa 230 min.<br>Elongation in % 15 min.<br>Reduction of Area in % 40 - 47<br>Hardness in HB 121 - 137<br>Impact in Joule - |  |
| -                    | -    | -             |                                                                                                                                                                                                                  |  |
| -                    | -    | -             |                                                                                                                                                                                                                  |  |
| -                    | -    | -             |                                                                                                                                                                                                                  |  |
| -                    | -    | -             |                                                                                                                                                                                                                  |  |
| -                    | -    | -             |                                                                                                                                                                                                                  |  |
| -                    | -    | -             |                                                                                                                                                                                                                  |  |
| -                    | -    | -             |                                                                                                                                                                                                                  |  |
| -                    | -    | -             |                                                                                                                                                                                                                  |  |
| -                    | -    | -             |                                                                                                                                                                                                                  |  |

| Cross Reference Table |          |         |                              |
|-----------------------|----------|---------|------------------------------|
| Material              | Standard | Country | Grade Belong to the Industry |
| G10220                | UNS      | USA     | Bars, Wire Rods and Tubing   |
| 1022                  | SAE      | USA     | Steel, Bar and Forging       |
| 1022                  | AISI     | USA     | Steel, Bar and Forging       |
| A 1040 1022           | ASTM     | USA     | Steel                        |
| A 108 Grade 1022      | ASTM     | USA     | Steel and Bar                |
| A 29 1022             | ASTM     | USA     | Steel and Bar                |
| A 510 1022            | ASTM     | USA     | Wire Rod and Round Wire      |

**For any further inquiries, please do not hesitate to contact us. You may visit our website at [AMTECH TECHNOCAST PVT. LTD.](http://AMTECH TECHNOCAST PVT. LTD.), call us at [+91 9879817994](tel:+919879817994), or email us at [manish@amtechtechnocast.com](mailto:manish@amtechtechnocast.com)**

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