



| Steel Grade: ASTM O2 UNS T31502 | | | | | | | | | |
|-----------------------------------|-----------------------------------|----------------------------|----------------------------------|-----------------------------------|------------------|------------------|--------------|----------------------------------|--------|
| CHEMICAL COMPOSITION | | | | | | | | | |
| C(%) | Si(%) | Mn(%) | P(%) ≤ | S(%)② | Cr(%) | Mo(%) | V(%) | W(%) | Other① |
| 0.85~0.95 | ≤0.50 | 1.40~1.80 | 0.03 | 0.03 | ≤0.50 | ≤0.30 | ≤0.30 | — | — |
| HARDNESS AND HEAT TREATMENT | | | | | | | | | |
| Hardness HBS After Annealing | Hardness HBS After Cold Drawing | Preheating Temperature /°C | Quenching/°C Salt-bath Furnace | Quenching/°C Atmosphere Furnace | Holding Time/min | Quenching Medium | Tempering/°C | Hardness ≥ HRC After Tempering | |
| 217 | 241 | 649 | 788 | 802 | 5~15 | Oil Cooling | 204 | 59 | |

Remark:

- ①, Residual elements content: Ni + Cu ≤ 0.75%.
- ②, A,D,H series to improve machinability, sulfur content can be increased to ω(S) 0.06%~0.15%.
- ③, Increase the H13 sulfur, the upper limit of manganese content can reach ω(Mn) 1.00%.
- ④, It also have Al which is ω(Al) 1.05%~1.25%.
- ⑤, P20 and P21 usually to pre hardened state supplies.
- ⑥, After tempering hardness L2 refers to the hardness of ω(C) 0.45%~0.55%.
- ⑦, It standard is ASTM A681-1999.

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