# *High Alloy Steel ASTM A351 Gr. CK20*

Standard Specification for Castings, Austenitic, for Pressure-Containing Parts

MATERIAL DATASHEET

| GROUP | SUB GROUP | INDUSTRY |
|---|---|---|
| **Ferrous Stainless Steel Alloys** | **ASTM A351 / 351M Castings** | **Investment Casting** |

This high-chromium, high-nickel austenitic casting grade is specifically engineered for elevated temperature service, offering outstanding oxidation and corrosion resistance in extreme thermal environments. With chromium levels reaching 27% and nickel up to 22%, it maintains structural integrity under prolonged exposure to high-temperature oxidizing atmospheres encountered in heat treatment, petrochemical, and power generation industries. Solution annealing optimizes its austenitic structure, delivering exceptional creep resistance and thermal stability for the most thermally demanding casting applications.

## CHEMICAL COMPOSITION

| ELEMENT | SYMBOL | COMPOSITION |
|---|---|---|
| Carbon | C % | 0.04 - 0.20 |
| Silicon | Si % | 1.75% Max |
| Manganese | Mn % | 1.500 max. |
| Phosphorus | P % | 0.040 max. |
| Sulphur | S % | 0.040 max. |
| Chromium | Cr % | 23.000 - 27.000 |
| Nickel | Ni % | 19.000 - 22.000 |
| Molybdenum | Mo % | 0.50 Max |
| Iron | Fe % | Balance |

## MECHANICAL PROPERTIES

### PERFORMANCE SPECIFICATIONS

| | | |
|---|---|---|
| **Tensile Strength** | Minimum Value | **450** MPa |
| **Yield Strength** | Minimum Value | **195** MPa |
| **Elongation** | Minimum Value | **30** % |

✓ HEAT TREATMENT
**Solution Annealing**

## INDUSTRY APPLICATIONS

- **Furnace fixtures** 
- **Heat treatment trays** 
- **Burner assemblies** 
- **High-temperature process equipment** 





**Tamboli Castings Limited**
Bhavnagar, Gujarat, India

**Phone:** +91 278 2541000
**Email:** info@tambolicastingslimited.com