

Ti-1023 alloy is a kind of high strength and high toughness titanium alloy, which was developed in the late 1970s for adapting the requirement of design principle of damage tolerance.

Table 1

Chemical Composition

| Ti | V | Fe | Al | O | C | N | H | Y | Residual | |
|---------|----------|---------|---------|-------|-------|-------|--------|--------|----------|-------|
| | | | | | | | | | Each | Total |
| balance | 9.0-11.0 | 1.6-2.2 | 2.6-3.4 | ≤0.13 | ≤0.05 | ≤0.05 | ≤0.010 | ≤0.005 | ≤0.1 | ≤0.30 |

Table 2

Mechanical Properties

| Direction | σ_b (MPa) | $\sigma_{0.2}$ (MPa) | δ_5 (%) | Ψ (%) | HB | K_{IC} (MPa \sqrt{m}) |
|-----------|---------------------|-------------------------|-------------------|---------------|------|-------------------------------|
| L | 1100-1250 | ≥1000 | ≥6 | ≥15 | ≥320 | - |
| T | 1100-1250 | ≥1000 | ≥4 | ≥10 | ≥320 | - |
| C-R | - | - | - | - | - | ≥50 |

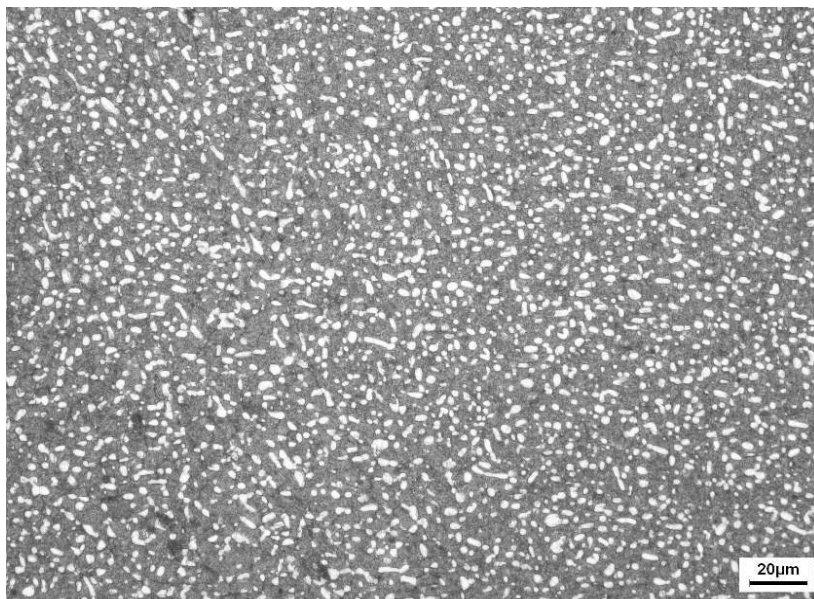


Fig.1 Micrograph 500X