

YAMATO GOKIN CO., LTD.

ALLOY DATA SHEET AMS 4590

1. Characteristics

- High mechanical properties
- Sea-water corrosion resistant
- Saline mist resistant

2. Related Specifications

- ASTM B150 C63020
- AMS 4590

3. Applications

- AEROSPACE : Landing gear Bushings & Bearings

4. Chemical Composition

Designation: CuAl11Ni5Fe5

(%)

| Element | Al | Ni | Fe | Mn | Cu |
|---------|------|-----|-----|-----|---------|
| Min | 10.0 | 4.2 | 4.0 | — | balance |
| Max | 11.0 | 6.0 | 5.5 | 1.5 | |

5. Physical Properties

| | | |
|---------------------------------------|-------------------------|---------|
| Density | g/cm ³ | 7.5 |
| Young's modulus | N/mm ² | 125,000 |
| Coefficient of expansion 20 to 300° C | × 10 ⁻⁶ /° C | 16 |
| Thermal conductivity | W/m K | 40 |
| Electrical conductivity | IACS % | 8 |

6. Available forms/Mechanical Properties

| Size/condition | forms/process | | | | | | | Mechanical properties | | | | | Available forms | | | | | | | | | | | | |
|--|--------------------|-------|--------------------|----------|-------|--------------------|----------|-------------------------|--------------------------------------|-----------------|----------|-----|-----------------|------------------------|---------|-------|-----------|---------|-------|--------|-------|-------|---------------|---------|----------|
| | Bars | | | Tubes | | | | Tensile strength Mpa | Yield strength 0.2% offset Mpa | Elongation % | Hardness | | | Semi-finished products | | | | | | | | | | parts | |
| | Extruded or forged | Drawn | Continuous casting | Extruded | Drawn | Continuous casting | Forgings | | | | HB | HRC | HV | Rounds | Squares | Plats | Hexagones | Section | Tubes | Plates | Discs | Rings | Forged blanks | stamped | machined |
| Bars φ ≤ 25.4mm TQ50 temper | ● | | | | | | | ≥931 | ≥689 | ≥6 | ≥26 | ● | | | | | | | | | | | | | |
| Bars 25.4 < φ ≤ 50.8mm TQ50 temper | ● | | | | | | | ≥896 | ≥655 | ≥6 | ≥26 | ● | | | | | | | | | | | | | |
| Bars 50.8 < φ ≤ 101.6mm TQ50 temper | ● | | | | | | | ≥896 | ≥621 | ≥6 | ≥26 | ● | | | | | | | | | | | | | |
| Tubes Thickness ≥ 25.4mm TQ50 temper | | | | ● | | | | ≥931 | ≥689 | ≥6 | ≥26 | | | | | ● | | | | | | | | | |
| Tubes 25.4 < Thickness ≤ 50.8mm TQ50 temper | | | | ● | | | | ≥896 | ≥655 | ≥6 | ≥26 | | | | | ● | | | | | | | | | |
| Tubes 50.8 < Thickness ≤ 101.6mm TQ50 temper | | | | ● | | ● | | ≥896 | ≥621 | ≥6 | ≥26 | | | | | ● | | | | ● | | | | | |

All information is intended as a guide to performance and application suitability.