



Dick@castingreps.com
 www.castingreps.com
 142 Main St. Suite 302
 Nashua, NH 03060
 (603) 889-5422

Aluminum Alloy Properties

| Alloy | Similar Designation | Usual Condition | Cast-ability | Machin-ability | Corrosion Resistance | Weld-ability | Hardenable | Density (g/cm3) | As-Cast | | | | Heat Treated | | | | Comments |
|----------------|---------------------------------|-------------------------|--------------|----------------|----------------------|--------------|------------|-----------------|-------------------|-----------------|----------------|-----------|-----------------------|---------------------|------------|------------|---|
| | | | | | | | | | Tensile Str (psi) | Yield Str (psi) | Elongation (%) | Hardness | Tensile Strength(psi) | Yield Strength(psi) | Elongation | Hardness | |
| A 201 (A02010) | AMS 4223 MIL A 2180 MIL C 19194 | T6 | 5 | 1 | 4 | 4 | yes | 2.8 | | | | | 67,000 | 59,000 | 7 | HRB 80 | Highest strength alloy, excellent machinability. |
| 354 (A03540) | MIL A 2180 | T6 | 1 | 3 | 3 | 1 | yes | 2.7 | | | | | 50,000 | 38,000 | 4 | HRE 75/95 | High strength. |
| 355 (A03550) | ASTM B26 ASTM B618 | T6 | 2 | 3 | 3 | 2 | yes | 2.7 | 23,000 | 12,000 | 3 | HRB 55/70 | 35,000 | 25,000 | 3 | HRE 73/93 | Good strength and corrosion resistance, leak proof and pressure-tight. |
| C 355 (A33550) | AMS 4215 MIL A 21180 ASTM B615 | T6 | 2 | 3 | 3 | 2 | yes | 2.7 | | | | | 38,000 | 25,000 | 5 | HRE 80/100 | Premium quality 355 alloy. |
| 356 (A03560) | AMS 4260 ASTM B26 | T6 | 1 | 4 | 2 | 2 | yes | 2.7 | 24,000 | 18,000 | 6 | HRB 50/65 | 33,000 | 24,000 | 3 | HRE 73/93 | Most popular aluminum alloy, Good strength, corrosion resistance, and stability. Pressure -tight. |
| A 356 (A13560) | AMS 4218 | T6 | 1 | 4 | 2 | 2 | yes | 2.7 | 23,000 | 12,000 | 6 | HRB 50/65 | 38,000 | 28,000 | 5 | HRE 73/93 | Premium quality 356 alloy. Poor brazability. Good weldability. |
| A 357 (A13570) | AMS 4219 | T6 | 2 | 3 | 2 | 1 | yes | 2.7 | 25,000 | 13,000 | 5 | HRB 50/65 | 45,000 | 35,000 | 3 | HRE 75/95 | Premium quality alloy. Higher strength than A 356. |
| 514 (A05 140) | 214,ASTM 0618 ASTM B26 | As- Cast | 5 | 1 | 1 | 2 | no | 2.7 | 25,000 | 12,000 | 3 | HRB 60 | | | | | Excellent for anodizing. |
| 535 (A05350) | ALMAG 35 AMS 4239 | As-Cast | 4 | 1 | 1 | 5 | no | 2.6 | 40,000 | 20,000 | 13 | HRB 80 | | | | | Maximum properties in the as-cast condition. Good for marine and other highly corrosive applications. |
| 712 (A07120) | ASTM B26 40E | As-Cast 3 wks. Aging | 4 | 1 | 3 | 4 | yes | 2.8 | 35,000 | 25,000 | 5 | HRB 80 | | | | | Good Brazing allow. Self aging. |
| 713 (A07130) | ASTM B26 Tenzalloy | As-Cast 3 wks. Aging | 4 | 1 | 3 | 4 | yes | 2.8 | 32,000 | 22,000 | 3 | HRB 80 | | | | | Excellent machinability. |

Key

- 1 = Excellent
- 2 = Very Good
- 3 = Good
- 4 = Fair
- 5 = Poor

Hardness Scale

- HRB = Rockwell Hardness, B Scale
- HRE = Rockwell Hardness, E Scale
- HRC = Rockwell Hardness, C Scale
- BHN = Brinell Hardness, B Scale
- No data = Metal not usually used in this condition