

ALLOY DESCRIPTION¹

The purest of the aluminum alloys. This alloy is typically used in applications requiring maximum ductility and relatively low strength. Good corrosion resistance, workability and weldability.

¹ Alloy subject to cast lot quantity restriction

TYPICAL MECHANICAL PROPERTIES

| Temper | Tensile (.0625" Dia. Specimen) | | | | | Hardness | Shear | | Fatigue | | Modulus | |
|--------|--------------------------------|-----|-------|-----|---------------|----------|---------------------------|----------------------------|---------|-----------------------------------|---------|-----------------------|
| | Ultimate | | Yield | | Elongation/4D | | Brinell 500kg 10 mm | Ultimate Shearing Strength | | Endurance Limit - R.R. Moore Type | | Modulus of Elasticity |
| | KSI | MPa | KSI | MPa | | % | | KSI | MPa | KSI | MPa | KSI x 10 ³ |
| O | 13 | 90 | 5 | 35 | 35 | 23 | 9 | 60 | 5 | 35 | 10 | 69 |
| H14 | 18 | 125 | 17 | 115 | 9 | 32 | 11 | 75 | 7 | 50 | 10 | 69 |
| H18 | 24 | 165 | 22 | 150 | 5 | 44 | 13 | 90 | 9 | 60 | 10 | 69 |

COMPARATIVE CHARACTERISTICS

| Temper | Corrosion Resistance | | Cold Workability ³ | Machinability ³ | Anodize Response ³ | Brazeability ⁴ | Weldability ⁴ | | |
|--------|----------------------|---------------------|-------------------------------|----------------------------|-------------------------------|---------------------------|--------------------------|-----|------|
| | General ¹ | Stress ² | | | | | Gas | Arc | Spot |
| O | A | A | A | E | A | A | A | A | B |
| H14 | A | A | A | D | A | A | A | A | A |
| H18 | A | A | C | D | A | A | A | A | A |

- Ratings A through E are relative ratings in decreasing order of merit, based on exposures to sodium chloride solution by intermittent spraying or immersion. Alloys with A and B ratings can be used in industrial and seacoast atmospheres without protection. Alloys with C, D and E ratings generally should be protected at least on faying surfaces.
- Stress-corrosion cracking ratings are based on service experience and laboratory tests of specimens exposed to the 3.5% sodium chloride alternate immersion test.
 - A= No known instance of failure in service or in laboratory tests.
 - B= No known instance of failure in service; limited failures in laboratory tests of short transverse specimens.
 - C= Service failures with sustained tension stress acting in short transverse direction relative to grain structure; limited failures in laboratory tests of long transverse specimens.
 - D= Limited service failures with sustained longitudinal or long transverse.
- Ratings A through D for Workability (cold), A through E for Machinability and A through C for Anodize Response, are relative ratings in decreasing order of merit.
- Ratings A through D for Weldability and Brazeability are relative ratings defined as follows:
 - A= Generally weldable by all commercial procedures and methods.
 - B= Weldable with special techniques or for specific applications that justify preliminary trials or testing to develop welding procedure and weld performance.
 - C= Limited weldability because of crack sensitivity or loss in resistance to corrosion and mechanical properties.
 - D= No commonly used welding methods have been developed.

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APPLICABLE SPECIFICATIONS

| | |
|-------------|-----------|
| Cold Drawn | Extruded |
| ASTM B210 | ASTM B221 |
| AMS 4062 | ASTM B241 |
| AMS-T-700/1 | |

CHEMICAL COMPOSITION LIMITS

| Weight % | Si | Fe | Cu | Mn | Mg | Cr | Ni | Zn | Ti | Others | |
|----------|--------------|----|------|------|-----|-----|-----|------|-----|--------|-------|
| | | | | | | | | | | Each | Total |
| Minimum | .. | .. | 0.05 | .. | .. | .. | .. | .. | .. | .. | .. |
| Maximum | 0.95 Si + Fe | | 0.2 | 0.05 | ... | ... | ... | 0.10 | ... | 0.05 | 0.15 |

TYPICAL PHYSICAL PROPERTIES

| Characteristic | | English | Metric | |
|---|--|-------------------|-----------------|-----|
| Nominal Density (68 °F/20 °C) <i>English: lbs./in.³</i> <i>Metric: g/cm³</i> | | 0.099 | 2.71 | |
| Melting Range | | 1190 °F - 1215 °F | 640 °C – 655 °C | |
| Coefficient of Thermal Expansion <i>English: micro in./in.-°F</i> <i>Metric: micro m/m -°K</i> | Linear 68 °F-212 °F 20 °C-100 °C | 13.1 | 23.6 | |
| Thermal Conductivity (68 °F/20 °C) <i>English: BTU-in/ft²hr°F</i> <i>Metric: W/m x K</i> | O | 1540 | 222 | |
| | H18 | 1510 | 218 | |
| Electrical Conductivity (68 °F/20 °C) <i>English: %IACS @ 68°F</i> <i>Metric: MS/M @ 20°C</i> | Equal Volume | O Temper | 59 | 34 |
| | | H18 | 57 | 33 |
| | Equal Weight | O Temper | 194 | 113 |
| | | H18 | 187 | 108 |