

Aluminum 206.0-T7 Casting Alloy


Categories: [Metal](#); [Nonferrous Metal](#); [Aluminum Alloy](#); [Aluminum Casting Alloy](#)


Material

Notes: **Composition Notes:**
Composition information provided by the Aluminum Association and is not for design.

Key Words: Aluminium 206.0-T7; AA206.0-T7AMS 4235, AMS 4236, AMS 4237; UNS A02060

Vendors: No vendors are listed for this material. Please [click here](#) if you are a supplier and would like information on how to add your listing to this material.

Physical Properties	Metric	English	Comments
Density	2.80 g/cc	0.101 lb/in ³	
Mechanical Properties	Metric	English	Comments
Hardness, Brinell	120	120	Estimated from Vickers Hardness.
Hardness, Knoop	151	151	Estimated from Vickers Hardness.
Hardness, Rockwell A	47	47	Estimated from Vickers Hardness.
Hardness, Rockwell B	75	75	Estimated from Vickers Hardness.
Hardness, Vickers	137	137	
Tensile Strength, Ultimate	436 MPa	63200 psi	
Tensile Strength, Yield	350 MPa @Strain 0.200 %	50800 psi @Strain 0.200 %	
Elongation at Break	11.7 %	11.7 %	in 50 mm
Reduction of Area	26 %	26 %	
Modulus of Elasticity	70.0 GPa	10200 ksi	In Tension; elastic modulus in compression is typically about 2% higher for aluminum alloys.
Compressive Yield Strength	372 MPa	54000 psi	
Ultimate Bearing Strength	960 MPa	139000 psi	e/D = 2.0
Bearing Yield Strength	660 MPa	95700 psi	e/D = 2.0
Poissons Ratio	0.33	0.33	
Fatigue Strength 	90.0 MPa @# of Cycles 1.00e+7	13100 psi @# of Cycles 1.00e+7	Axial; K _t =3.0; R=0.1
	205 MPa @# of Cycles 1.00e+7	29700 psi @# of Cycles 1.00e+7	Axial; R=0.1
	370 MPa @# of Cycles 1000	53700 psi @# of Cycles 1000	Axial; K _t =3.0; R=0.1
	435 MPa @# of Cycles 1000	63100 psi @# of Cycles 1000	Axial; R=0.1
Fracture Toughness	43.0 MPa-m ^{1/2}	39.1 ksi-in ^{1/2}	
Shear Modulus	26.3 GPa	3810 ksi	Calculated
Shear Strength	257 MPa	37300 psi	
Charpy Impact	9.50 J	7.01 ft-lb	V-notch
Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.00000520 ohm-cm	0.00000520 ohm-cm	

Thermal Properties	Metric	English	Comments
Heat of Fusion	389 J/g	167 BTU/lb	Typical for cast aluminum
CTE, linear 	19.3 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature 20.0 - 100 $^{\circ}\text{C}$	10.7 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature 68.0 - 212 $^{\circ}\text{F}$	
	24.7 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$ @Temperature 20.0 - 300 $^{\circ}\text{C}$	13.7 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$ @Temperature 68.0 - 572 $^{\circ}\text{F}$	Value for Aluminum 201.0
Specific Heat Capacity	0.920 J/g- $^{\circ}\text{C}$	0.220 BTU/lb- $^{\circ}\text{F}$	
Thermal Conductivity	121 W/m-K	840 BTU-in/hr-ft ² - $^{\circ}\text{F}$	
Melting Point	570 - 650 $^{\circ}\text{C}$	1060 - 1200 $^{\circ}\text{F}$	
Solidus	570 $^{\circ}\text{C}$	1060 $^{\circ}\text{F}$	
Liquidus	650 $^{\circ}\text{C}$	1200 $^{\circ}\text{F}$	

Processing Properties	Metric	English	Comments
Solution Temperature	510 - 516 $^{\circ}\text{C}$	950 - 960 $^{\circ}\text{F}$ for 2 hr followed by 980-990 $^{\circ}\text{F}$ for 14-20 hr and a water quench	
Aging Temperature	199 $^{\circ}\text{C}$	390 $^{\circ}\text{F}$	hold at temperature for 8 hr

Component Elements Properties	Metric	English	Comments
Aluminum, Al	93.2 - 95.3 %	93.2 - 95.3 %	As remainder
Copper, Cu	4.2 - 5.0 %	4.2 - 5.0 %	
Iron, Fe	<= 0.15 %	<= 0.15 %	
Magnesium, Mg	0.15 - 0.35 %	0.15 - 0.35 %	
Manganese, Mn	0.20 - 0.50 %	0.20 - 0.50 %	
Nickel, Ni	<= 0.050 %	<= 0.050 %	
Other, each	<= 0.050 %	<= 0.050 %	
Other, total	<= 0.15 %	<= 0.15 %	
Silicon, Si	<= 0.10 %	<= 0.10 %	
Tin, Sn	<= 0.050 %	<= 0.050 %	
Titanium, Ti	0.15 - 0.30 %	0.15 - 0.30 %	
Zinc, Zn	<= 0.10 %	<= 0.10 %	

[References](#) for this datasheet.

Some of the values displayed above may have been converted from their original units and/or rounded in order to display the information in a consistent format. Users requiring more precise data for scientific or engineering calculations can click on the property value to see the original value as well as raw conversions to equivalent units. We advise that you only use the original value or one of its raw conversions in your calculations to minimize rounding error. We also ask that you refer to MatWeb's [terms of use](#) regarding this information. [Click here](#) to view all the property values for this datasheet as they were originally entered into MatWeb.