HM Wire International, Inc.

Ph: 330-244-8501 Fax: 330-244-8561

www.litz-wire.com info@litz-wire.com www.hmwire.com

Aluminum 2024

Categories:	2000 Series Aluminum Alloy; Metal; Nonferrous Metal; Aluminum Alloy;
Material Notes:	Data points with the AA note have been provided by the Aluminum Association, Inc. and are NOT FOR DESIGN.
Composition Notes:	A Zr + Ti limit of 0.20 percent maximum may be used with this alloy designation for extruded and forged products only, but only when the supplier or producer and the purchaser have mutually so agreed. Agreement may be indicated, for example, by reference to a standard, by letter, by order note, or other means which allow the Zr + Ti limit. Aluminum content reported is calculated as remainder. Composition information provided by the Aluminum Association and is not for design.
KeyWords	Aluminium 2024-O; UNS A92024; AA2024-O; ISO AlCu4Mg1; DIN AlCuMg2; ASME SB211; CSA CG42 (Canada); NF A-U4G1 (France);

Physical Properties	Metric	English	Comments
Density	2.78 g/cc	0.1 lb. / in³	AA; Typical
Mechanical Properties	**Metric**	**English**	**Comments**
Hardness, Brinell	47	47	AA; Typical; 500 g load; 10 mm ball
Ultimate Tensile Strength	186 MPa	27000 psi	AA; Typical
Tensile Yield Strength	75.8 MPa	11000 psi	AA; Typical
Elongation at Break	20%	20%	AA; Typical; 1/16 in. (1.6 mm) Thickness
Modulus of Elasticity	73.1 GPa	10600 ksi	AA; Typical; Average of Tension and compression. Compression modules is about 2% greater than tensile modules
Poissons Ratio	0.33	0.33	
Machinability	30.00%	30.00%	0 - 100 Scale of Aluminum Alloys
Shear Modulus	28 GPa	4060 ksi	
Shear Strength	124 MPa	18000 psi	AA; Typical
Electrical Properties	**Metric**	**English**	**Comments**
Electrical Resistivity	3.49e-006 ohm-cm	3.49e-006 ohm-cm	AA; Typical at 68°F
Thermal Properties	**Metric**	**English**	**Comments**
CTE, linear 68°F	23.2 µm/m-°C	12.9 µin/in-°F	AA; Typical; Average over 68-212°F range.
CTE, linear 250°C	24.7 µm/m-°C	13.7 µin/in-°F	Average over the range 20-300°C
Specific Heat Capacity	0.875 J/g-°C	0.209 BTU /lb-°F	
Thermal Conductivity	193 W/m-K	1340 BTU-in/hr-ft²-°F	AA; Typical at 77°F
Melting Point	502 - 638°C	935 - 1180°F	AA; Typical range based on typical composition for wrought products 1/4 inch thickness or greater.
Solidus	502°C	935°F	AA; Typical
Liquidus	638°C	1180°F	AA; Typical
Processing Properties	**Metric**	**English**	**Comments**
Annealing Temperature	413°C	775°F	

Material Components Properties	Metric & English	Comments
Aluminum, Al	90.7 - 94.7 %	
Chromium, Cr	Max 0.1 %	
Copper, Cu	3.8 - 4.9 %	
Iron, Fe	Max 0.5 %	
Magnesium, Mg	1.2 - 1.8 %	
Manganese, Mn	0.3 - 0.9 %	
Other, each	Max 0.05 %	
Other, total	Max 0.15 %	
Silicon, Si	Max 0.5 %	
Titanium, Ti	Max 0.15 %	
Zinc, Zn	Max 0.25 %	

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