

ALLOY DESCRIPTION¹

One of the Manganese alloys. Typically used for condensers and Heat exchangers in chemical equipment and pressure vessels. Products include Extruded and Drawn Tube, Pipe, Rod and Bar. Good corrosion resistance, workability and weldability.

¹ Alloy subject to cast lot quantity restriction

TYPICAL MECHANICAL PROPERTIES

Temper	Tensile (.500" Dia. Specimen)				Elongation/4D	Hardness Brinell 500kg 10 mm	Shear		Fatigue		Modulus	
	Ultimate		Yield				Ultimate Shearing Strength	Endurance Limit - R.R. Moore Type		Modulus of Elasticity		
	KSI	MPa	KSI	MPa				%	KSI	MPa	KSI	MPa
H112	16	110	6	40	...	*	*	*	*	*	*	*
O	16	110	6	40	25	35	11	75	7	50	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
H112	*	*	*	*	*	*	*	*	*
O	A	A	A	E	*	A	A	A	B

- 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.

* DATA NOT AVAILABLE

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APPLICABLE SPECIFICATIONS

Cold Finished	Extruded

CHEMICAL COMPOSITION LIMITS

Weight %	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	Others	
										Each	Total
Nominal	0.6	0.7	0.05 - 0.20	1.0 - 1.5	0.1	...	0.05	0.15

TYPICAL PHYSICAL PROPERTIES

Characteristic		English	Metric
Nominal Density (68 °F/20 °C)		0.099	g/cm ³
Melting Range		1190 °F - 1210 °F	640 °C - 655 °C
Specific Heat (212 °F/100 °C)			
Coefficient of Thermal Expansion	Linear 68 °F-212 °F 20 °C-100 °C	12.9	
	Volumetric 68 °F/20 °C		pm/ x K
Thermal Conductivity (68 °F/20 °C)	H112	*	*
	O	1340	193 W/m x K
Electrical Conductivity (68 °F/20 °C)	Equal Volume	H112	*
		O	50
	Equal Weight	H112	*
		O	163

* DATA NOT AVAILABLE