



ALLOY

C34500

Data Sheet

Typical Chemistry & Mechanical Properties

Alloy Number	Name	Nominal Chemical Composition	Tensile Strength (KSI)	Yield Strength (KSI)	Elongation %	Rockwell B Hardness	Remarks
UNS C34500	Leaded Brass	Cu: 62.0~65.0% Pb: 1.5~2.5% Fe: 0.15% max Zn: Rem	54	34	35%	66	Used for screw machine products requiring some cold formability (i.e. crimping, knurling)

Straightness Tolerances

Round	All Sizes	1/4" in any 10' portion
Hexagonal/Octagonal	Up to 4.000" >4.000"	3/8" in any 10' portion As Extruded
Square/Rectangle	All Sizes	3/8" in any 10' portion

Drawn Length Tolerances

0.250" to 2.000" (Inclusive)	+/-0.500"
2.000" to 3.000" (Inclusive)	+/-0.500"
3.000" to 4.000" (Inclusive)	+/-0.500"

Notes:

Standard Lengths: 12', 14', 15' & 16'
All other lengths considered non-standard
Minimum Length: 9' - 11" (119")

Shapes and Sizes

Round	0.250" to 4.000"
Hexagonal/Octagonal	0.250" to 3.500"
Square/Rectangle	0.375" to 2.000"

Diameter Tolerances

	Round	Hexagonal
0.250" to 0.375" (Inclusive)	+/- 0.0015"	+/- 0.0030"
0.375" to 0.500" (Inclusive)	+/- 0.0015"	+/- 0.0030"
0.500" to 1.000" (Inclusive)	+/- 0.0020"	+/- 0.0040"
1.000" to 2.000" (Inclusive)	+/- 0.0025"	+/- 0.0050"
2.000" to 2.500" (Inclusive)	+/- 0.0030"	+/- 0.0060"
2.500" to 3.000" (Inclusive)	+/- 0.0035"	+/- 0.0075"
3.000" to 3.500" (Inclusive)	+/- 0.0045"	+/- 0.0090"
3.500" to 4.000" (Inclusive)	+/- 0.0050"	+/- 0.0100"



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Machinability: Alloy C34500 offers the best combination of machining & formability. The machinability rating is 90%. The recommended tool design, feeds & speeds for machining this material are as follows:

	Speed (sfpm)	Feed (ipr)	Back Rake Angle (degrees)	Clearance Angle (degrees)
Lathe Turning Tools:	300~1,000	0.002~0.015	0~5	6
Drills (118°):	300~1,000	0.003~0.020	0	12~15
Milling Cutters:	200~500	0.015~0.030	0~10	10~15
Form Tools (1/2°):	300~1,000	0.001~0.003	0~5	7~12
Taps:	100~200 (lineal)		2~4	

Use maximum speeds & minimum feeds for finish cuts. Light mineral (paraffin) oil or water soluble oil (20/1) should be used as a cutting lubricant & coolant. Sulfurized oils will stain parts & should be avoided.

Workability: Alloy C34500 exhibits an excellent capacity for being machined, thread rolled & formed. This alloy has a poor capacity to be hot worked. If cold working or extensive machining is necessary, it is recommended that this be followed by stress relieving at 500 degrees for 1.5 hours to reduce the possibility of stress corrosion cracking.

Spec. Equal.: ASTM B453; SAE J463, C34500 (rods, bars, shapes & forgings)

Applications: The C34500 is used for screw machine applications requiring the ability to be cold formed either during, or subsequent to, machining. The material can be thread rolled, knurled, bent, flared swaged or stacked. Alloy C34500 alloy exhibits somewhat superior ductility in relation to comparable (i.e. alloy C35300) alloys.

Typical applications include valve stems, adapters, couplings, gears, pinions, & flare fittings.

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