

SAE-AMS-QQ-A-225/8

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400 Commonwealth Drive, Warrendale, PA 15096-0001

# AEROSPACE MATERIAL SPECIFICATION



AMS-QQ-A-225/8

Issued

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Submitted for recognition as an American National Standard

## ALUMINUM ALLOY 6061, BAR, ROD, WIRE, AND SPECIAL SHAPES; ROLLED, DRAWN, OR COLD FINISHED

UNS A96061

### NOTICE

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The complete requirements for procuring 6061 aluminum alloy bar, rod, wire and special shapes described herein shall consist of this document and the latest issue of AMS-QQ-A-225.

### 1. SCOPE AND CLASSIFICATION:

#### 1.1 Scope:

This specification covers the specific requirements for 6061 aluminum alloy bar, rod, wire, and special shapes produced by rolling, drawing, or cold finishing.

#### 1.2 Classification:

1.2.1 Tempers: Bar, rod, wire, and special shapes are of the following tempers, as specified (See 6.2): O, T4, T6, T42, T62, T451, or T651 temper. Definitions of these tempers are specified in AMS-QQ-A-225.

### 2. APPLICABLE DOCUMENTS:

See AMS-QQ-A-225/8.

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## 3. REQUIREMENTS:

## 3.1 Chemical Composition:

The chemical composition shall conform to the requirements specified in Table I.

TABLE I. Chemical Composition 1/

Element	Percent	
	Minimum	Maximum
Magnesium	0.8	1.2
Silicon	0.4	0.8
Copper	0.15	0.40
Chromium	0.04	0.35
Iron	-	0.7
Zinc	-	0.25
Titanium	-	0.15
Manganese	-	0.15
Other Elements, each	-	0.05
Other Elements, total	-	0.15
Aluminum	Remainder	

1/ Analysis shall routinely be made only for the elements specifically mentioned in Table I. If, however, the presence of other elements is indicated or suspected in the course of routine analysis, further analysis shall be made to determine conformance to the limits specified for other elements.

## 3.2 Mechanical Properties:

## 3.2.1 Mechanical Properties of Material as Supplied: The mechanical properties in the direction of working shall conform to the requirements of Table II for the temper specified.

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TABLE II. Mechanical Properties (See 6.4)

Temper	Diameter or Thickness Inches	Tensile Strength minimum ksi	Yield Strength at 0.2 percent Offset or at Extension Indicated 5/		Elongation in 2 in. or 4 times diameter 5/ minimum percent
			minimum, ksi	extension under load, inch/inch	
O	Up to 8.000, incl	22.0 2/	6.0	—	18
T4	Up to 8.000, incl 3/	30.0	16.0	0.0036	18
T42 4/	Up to 8.000, incl 3/	30.0	14.0	0.0034	18
T451 1/	0.500 to 8.000, incl 3/	30.0	16.0	0.0036	18
T6 and T62 4/	Up to 8.000, incl 3/	42.0	35.0	0.0055	10
T651 1/	0.500 to 8.000, incl 3/	42.0	35.0	0.0055	10

1/ Tempers T451 and T651 are available only in rod, bar, and shapes

2/ Maximum

3/ For bar, the maximum cross-sectional area is 50 square inches

4/ Material in the T42 or T62 temper is not available from material producers

5/ See AMS-QQ-A-225 for yield strength and elongation requirement exceptions