McMASTER-CARR®

Certificate

404-346-7000
404-349-9091 (fax)
atl.sales@mcmaster.com

Purchase Order	Order Date	Placed By	McMaster-Carr Number	Number of Certificates
P1443524	2/3/2022	Jane Beattey	3835098-01	1

Line		Product	Ordered	Status	Certificate
1	8974K24	Multipurpose 6061 Aluminum, 3/8" Diameter, 6 Feet Long	1 each	1 each delivers February 7	174–0290

Your order is subject only to our terms and conditions, available at www.mcmaster.com or from our Sales Department.

SO: 695353, LINE #1
HEAT #: 24454155
PO: RL-76144470

MCMASTER-CARR SUPPLY CO
04.37572.00

.375" DIA X 72.000 ALUM ROD 6061T6511 EXT

Certified Inspection Report

Hydro Extrusion USA, LLC
1550 N. Hydro Way
--
SPANISH FORK, UT
84660-1349

--

Invoice To Customer

HOWARD PRECISION METALS INC
PO BOX 240127
8058 N 87TH STREET
--
MILWAUKEE, WI - 53224

Ship To Customer

HOWARD PRECISION METALS INC
8058 N 87TH STREET
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MILWAUKEE, WI - 53224

Cert Number	Page
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Sales Order Number	Line No.	Customer P/O	Cert Creation Date	Cert Print Date
1101805917	26	051021-026	17-DEC-21	17-DEC-21

Quantity Shipped	Date Shipped	Item Description	Specification
1062 LB	17-DEC-21	Extruded ECON-O-ROD 0.375 DIA +/-.004 SECT 555306 144.000 IN LN FIN M-MILL W/F 0.13 F 9 CS .38 6061/T6511	ASTM B221 REV 20 Table 1 Chemical Composition Limits Table 2 Mechanical Property Limits ASME SB 221 REV 17 Table 1 Chemical Composition Limits Table 2 Mechanical Properties Limits AMS QQ-A-200/8 REV A
B/L	**Item No.**		
1230560	G03298029		
Delivery Id	**Item No. Rev**		
5347048	--		
CustomerPart No.			
E04.375			

Applicable Specifications, Revisions and Exceptions

For U.S. Government Sales (when applicable to extrusions):
Items supplied are compliant with the Buy American Act DFARS 252.225-7001
Melted in the USA or a qualifying country, as identified in the Buy American Act (DFARS 252.225-7001)

COMPOSITION NOTE: The values for 'Others Each' and 'Others Total' have met the limits as shown on this certified inspection report. Remainder is Aluminum.

Hydro Extrusion USA, LLC hereby certifies that the extrusions covered in this report are within the acceptable ranges of the sections or the specification tables, excluding footnotes, identified herein. Chemical composition may be based on results provided by external billet suppliers. Further information on processing, testing including ASTM B557, and inspection is available at www.hydro.com/technicalspecificationsENA. Sales are governed by the Extrusion North America Standard Terms and Conditions of Sale available at www.hydro.com/termsconditionsENA, unless otherwise mutually agreed in writing.

Signature And Title

Steven Tanner — 17-DEC-21
Quality Manager

Quantities per Lot / Packages

Package Number	Lot Number	Quantity	UOM	Weight	
				Gross	Net
G14-PKG2470946	24454155	446	PCS	695	696
G14-PKG2470946	24454155	--	--	--	--
G14-PKG2470949	24454155	242	PCS	377	372

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Composition Limits

Alloy	Alloy		Si		Fe		Cu		Mn		Mg		Cr	
	PCT (%)		PCT (%)		PCT (%)		PCT (%)		PCT (%)		PCT (%)		PCT (%)	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
6061	--	--	0.40	0.80	---	0.70	0.15	0.40	---	0.15	0.80	1.20	0.04	0.35

Alloy	Zn		Ti		Others Each		Others Total	
	PCT (%)		PCT (%)		PCT (%)		PCT (%)	
	Min	Max	Min	Max	Min	Max	Min	Max
6061	---	0.25	---	0.15	---	0.05	---	0.15

Composition Results

Heat / Cast	Alloy	Country of Melt	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others Each	Others Total
S21113006	--	US	0.64	0.28	0.20	0.05	0.86	0.04	0.04	0.02	--	--

Mechanical Property - Test Limits

Test Type			UTS - L		TYS - L		EL 4D-Long	
UOM			KSI		KSI		PCT	
# of Test			--		--		--	
Test Temper	Lot Number	# of Tests	MIN Value	MAX Value	MIN Value	MAX Value	MIN Value	MAX Value
T6511	24454155	2	43.5	43.6	38.7	39.4	15.0	15.0

Notes

Mercury is not a normal contaminant in aluminum alloys and we do not knowingly use it in the manufacture of our goods.

Extrusions produced to T6511 temper also meet T6 temper requirements

Extruded in the USA

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