

Certificate of Conformance

PACKING SLIP

SHIPPER H2118



630 E. LAMBERT ROAD / BREX, CA 92821 / (714) 990-4121

Date Shipped	Shipment No	No. Cartons	Weight
		3	96.4
Shipped Via FED EX			

Sold To B E AEROSPACE INC.
CONSUMABLES MGMT.
PO BOX 025263
MIAMI, FL 33102-5263

Ship To B/E AEROSPACE
9835 N.W. 14TH
MIAMI, FL 33172

Cust. No.	Our Order	Date Ordered	Customer P.O. No.	Salesman No.	Freight Charges	F.O.B. Point
49505	065887	01-31-13	OMRV67	48		* SHIP POINT *

Line	Quantity Order	Item Number	Description	Quantity Previously Shipped (Due Date)	Quantity Shipped
01	22,000	871881	NAS1473A5 BSN1473-5 (BSN1473-5 NAS1473A5 (& A5K)) ECCN : 9A991d Schedule B # 7318-16-0000 PO ITEM 001 REV 10 CHEMICAL & PHYSICAL CERTS AND C OF C REQUIRED LOT F1811 5,736	11,003	5,736



Special Instructions:

We Hereby certify the referenced order(s) conform to the requirements of the applicable drawings, standards and specifications. Evidence of compliance is retained on file.

Rick Kuhns.
Q.A. Director

MANUFACTURED IN U.S.A.

NEXT TO LAST ORDER LINE.



CERTIFICATE OF CONFORMITY
CHEMICAL & PHYSICAL
TEST DATA

630 East Lambert Road
P.O. Box 630/Brea, California 92822-0630
Tel: (714) 990-4121 Fax: (714) 529-6726



LOT #: F1811

Assembly / Mechanical Tests

Customer Drawing:	NAS1473A5 NAS1473A5K	Revision:	10
Bristol Part No:	BSN1473-5	Manufacture Date:	10/25/13
Performance :	NASM25027	Lot Quantity :	5,736

Push-Out / Torque-Out

Requirements:		Sample Size - 5	Push-Out = 125	Torque-Out = 160	
Samples	1	2	3	4	5
Push-Out	125	125	125	125	125
Torque-Out	160	160	160	160	160

Component Requirements	Material	Bristol Q.C. Number	NDT	Finish		Thread Spec
Nut Lot # E4329	C1050 Per AMS 5085	CS 28313 Lab Tested	MPI per ASTM-E-1444 Sample	Cad Plate per AMS-QQ-P-416 Type II Class 2	Lube per AS5272 Type I	AS8879
Conformance	AMS 5085	Material Traceability	Conforms NADCAP	Conforms NADCAP	Conforms NADCAP	Conforms
Source	Material / Mill Certs	Bristol	Bristol	Bristol	Bristol	Bristol

Tensile

Required Min.	7390 LBS				
Sample No.	LBS	Sample No.	LBS	Sample No.	LBS
1	7760	2	7760	3	7760
4	7760	5	7760	6	7760
7	7760	8	7760	9	7760
10	7760				

Stress Embrittlement Test

Required Load	185	IN-LBS
Sample Size	10	PCS
Time	23	HOURS



630 East Lambert Road
P.O. Box 630/Brea, California 92822-0630
Tel: (714) 990-4121 Fax: (714) 529-6726

**CERTIFICATE OF CONFORMITY
CHEMICAL & PHYSICAL
TEST DATA**



LOT #: F1811

Component Requirements	Material	Bristol Q.C. Number	NDT	Finish
Dome (Shell) Lot # E4327	C1050 per AMS 5085	CS 28232 Lab Tested	MPI per ASTM-E-1444 Sample	Cad Plate per AMS-QQ-P-416 Type II Class 2
Conformance	AMS 5085	Material Traceability	Conforms NADCAP	Conforms NADCAP
Source	Material / Mill Certs	Bristol	Bristol	Bristol

Component Requirements	Material	Bristol Q.C. Number	Finish	Rubber Mold
Washer (Seal) Lot # E4332	7075 per AMS-QQ-A-225	NB 28333 Lab Tested	Chemical Conversion Coatings per MIL-C-5541	MIL-PRF-6855
Conformance	AMS-QQ-A-225/9	Material Traceability	Conforms NADCAP	Conforms
Source	Material / Mill Certs	Bristol	Bristol	PMR # 272574

Comments:

Parts have been produced, sampled, inspected, and tested in accordance with customer purchase order and/or referenced specifications and conform to all requirements unless otherwise specified.

Unless otherwise specified, specifications are to the latest revision. Test methods are in accordance with the latest revisions of NASM-1312 Fastener Test Methods if not specified by the customer. Any deviations to specification or customer purchase order requirements relative to testing have been resolved in writing with customers prior to shipment.

This certification relates only to the item(s) tested and shall not be reproduced except in full. The recording of false, fictitious or fraudulent statements or entries on this certificate may be punishable as a felony under federal law.

Review and Signature by one (1) of the following Authorizes this certification

Karen Day Certification Administrator

Rick Kuhns, Quality Assurance Manager

Angie Figueroa, Certification Administrator

Gus Marquez, Final Inspection Supervisor



CERTIFICATE OF CONFORMITY CHEMICAL & PHYSICAL TEST DATA

630 East Lambert Road
P.O. Box 630/Brea, California 92822-0630
Tel: (714) 990-4121 Fax: (714) 529-6726

Materials Testing



NDT

TORQUE EFFECTIVITY TEST

NUT PART #: BSN1473-5XNBOLT USED: NAS9705LOT #: E4329

MAX INSTLN. & REMOVAL: 60.0 IN-LBS
SEATING TORQUE: N/A IN-LBS

MIN BREAKAWAY: 6.5 IN-LBS
1st CYCLE: N/A

SAMPLE NO.	CYCLE														
	1			7			15								
	I	B	R	I	B	R	I	B	R	I	B	R	I	B	R
1	52.0	50.0	55.0	32.0	32.0	30.0	30.0	30.0	28.0						
2	35.0	40.0	42.0	34.0	34.0	34.0	30.0	30.0	28.0						
3	50.0	50.0	50.0	38.0	34.0	33.0	30.0	28.0	30.0						
4	25.0	25.0	29.0	26.0	22.0	24.0	20.0	20.0	22.0						
5	50.0	45.0	47.0	28.0	28.0	29.0	24.0	22.0	24.0						
6	45.0	42.0	45.0	30.0	32.0	29.0	28.0	28.0	28.0						
7	50.0	45.0	50.0	32.0	30.0	30.0	30.0	26.0	27.0						
8	47.0	44.0	49.0	30.0	30.0	30.0	30.0	25.0	22.0						
9	55.0	55.0	50.0	36.0	36.0	36.0	32.0	28.0	30.0						
10	51.0	47.0	49.0	39.0	37.0	36.0	36.0	34.0	34.0						
11															
12															
13															
14															
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27															

REMARKS: _____



PMR

PRECISION MFG. & RUBBER CO., INC.

Date 10/24/2013

Conformance Certificate for Material Shipped

The PMR - Precision Mfg. & Rubber Co. hereby certifies that all materials used in the manufacture of parts called for on purchase order no. 612026-77068

received from Printel Industries conform to the material specifications indicated in drawings or specifications as called for on the said purchase order. Test reports are on file with us or with our suppliers for examination and indicate conformance with applicable specification requirements.

The PMR - Precision Mfg. & Rubber Co. also certifies that the parts listed below shipper no. 272574 are manufactured in accordance with the material specifications called for on said purchase order that are current on the date on which the order was accepted.

PART NO	DESCRIPTION	QUANTITY	CURE DATE	SHELF LIFE
BEN1473-5	Work Order: F1011-00 Rubber Mfg. Part 1831-CL LQ60-BL4 Cert: 228697A Type: Dome # of parts	5,748	4Q 2013 (10/13)	4Q 2028

By: George Burkh
George Burkh

Gibbs Certificate of Analysis

Gibbs Wire & Steel Company, Inc. 3751 Olive Road, South Bend, Indiana 46628

BRISTOL INDUSTRY
630 E. LAMBERT
BREA

CA 92621 USA

Date Shipped: 3/12/2013
Cust Order #: 588077
Amount Shipped: 1777.00

Description: 0.0200" P/M.001 X 2.0000 P/M.003
C1050 Annealed Spring Steel Strip

Edge: # 3

Heat Number: NLPQ5046

Mill Coil ID:

Gibbs Coil ID:

Gibbs Number: 26172

To Certify that the material shipped against your above order number is in accordance with

Specification: ASTM A684-10A AMS 5085E

C:	0.5200	Mn:	0.7100	P:	0.0090	Sul:	0.0070
Si:	0.1710	Cr:	0.0600	Ni:	0.0700	Mo:	0.0200
Co:		Cu:	0.1400	N2:	0.0030	Fe:	
Ti:	0.0020	Al:	0.0360	Be:		W:	
Zn:		Sn:		Pb:		Cb:	
Ta:		V:	0.0020				

PRE-HEAT

POST-HEAT

MIN

MAX

MIN

MAX

Tensile Strength:

Yield Strength:

Rockwell Hardness: B 60

B 60

Grain:

Elongation % in 2":

SCANNED

Alison Fink

FEROLETO STEEL CO.
MATERIAL-FREE FROM MERCURY CONTAMINATION
ORIGIN & MELT-USA

Gibbs Wire & Steel Company, Inc.
Certification Clerk

Alison Fink

ITEM# 980161

LAB APPROVED

DATE: 3/7/2013 TECH:

Q.C. # CS28232

DFAR 252.235-7009

(252.235-7014 ALT 1)

GWS #: 625406

Tel: (574)234-6071; Fax: (574)237-0712

SM

Feroletto Steel Company, Inc.

BRIDGEPORT, CONNECTICUT 06805

CERTIFICATE OF ANALYSIS

Customer: Gibbs Wire & Steel Company Our FS #: 57986
Type: CR Quality: HC P.O.#: 026172
Grade: 1050 Temper: B-24 Date Shipped: 2-7-83
Gauge: 020 Width: 9.500 Quantity Shipped: 2.604

Chemical Composition

Carbon - C	Manganese - Mn	Phosphorus - P	Sulphur - S	Silicon
<u>52</u>	<u>91</u>	<u>009</u>	<u>007</u>	<u>121</u>

Heat #: NLPQ5046
Hardness Average: B60
Country of Origin: USA Country of Melt: USA

(Circle one or both of the following specifications below if applicable)

Material meets ASTM-A684-10A

Material meets AMS-5085E

Material is Mercury-free

I certify that the chemical composition and mechanical properties listed above were extracted from chemical and physical test reports that are on file in our office which conform to AISI Chemical Specifications.

FEROLETO STEEL COMPANY, Inc.

Authorized Signature: Rex Ego

Title: Supervisor

Form # FS-1037D/Gibbs Wire & Steel

LAB APPROVED

DATE: MAR 27 2013 TECH: CS28232

Q.C. # CS28232

DFAR 252.225-7009

(252.225-7014 ALT 1)



NLMM PENNSYLVANIA
16 ROEMER BOULEVARD
FARRELL, PA. 16121
PHONE: 724-983-4444

01/16/2013 10:32
CS176105
Page 2 of 3

CERTIFICATE OF TEST FOR COIL 7529331A HEAT# NLPO5046

SOLD TO: FERROLETO STEEL CO. INC. P.O. BOX 3344 BRIDGEPORT, CT 06605		CUSTOMER P.O. 8896		ORDER: 303672		ITEM: 50232881	
SHIP TO: FERROLETO STEEL CO. INC. BRIDGEPORT, CT 06605		REORDER FROM COIL: 7529331A PRODUCT TYPE: CR PRODUCT CATEGORY: NA DISCREPANCY: 1059 CARGO TO: 44000.000 ORDERED WEIGHT: 44000.000 WEIGHT TOL: +1000.0000		PROCESS: CR FINISH: 2400 AA HANDLING: NA YIELD: AM 80 FOR WAK TENSILE ELONGATION: BEND:		INDUSTRY SPEC: ASTM A282 CUSTOMER SPEC: CUSTOMER PART #: CERT #: CUSTOMER NOTE:	

JOB #	COIL #	SIZE	WGT	HARDNESS
303672-01	7529331A 7529331B	1200 x 48.0000 1200 x 48.0000	21800 21280	79-15T
HEAT# NLPO5046				C: E2 - Wt: 74 - P: 009 - S: 007 - Sh: 171 - AL: 038 - CL: 14 - NE: 07 - CR: 06 - MO: 02 - SN: 028 - TR: 002 - V: 002 - NR: 003 - NE: 008 - BR: 0001 - CA: 0008 - CE: - ZR: - AS: - SE: -
JOB #	COIL #	SIZE	WGT	
303672-01	7529331A	1200 x 48.0000	21800	C: E2 - Wt: 74 - P: 009 - S: 007 - Sh: 171 - AL: 038 - CL: 14 - NE: 07 - CR: 06 - MO: 02 - SN: 028 - TR: 002 - V: 002 - NR: 003 - NE: 008 - BR: 0001 - CA: 0008 - CE: - ZR: - AS: - SE: -
HEAT# NLPO5046				

128428

Manufactured in the United States of America - BUY AMERICAN Campaign.
Elements with a reported value of " " were undetected, and thus are less than .001%.
NLMM Pennsylvania Corp. certifies that the material listed herein has been tested in accordance with the methods prescribed in the governing specifications.
Based upon the results of such testing, the material conforms to the specifications. All testing has been performed using the current revision of the testing specifications.

Dale F Siddons
Supervisor - Metallurgical Lab

LAB APPROVED

DATE: MAR 27 2013 TECH:

Q.C. # 6528232

DFAR 252.225-7009

(252.225-7014 ALT 1)

Gibbs Certificate of Analysis

Gibbs Wire & Steel Company, Inc. 3751 Olive Road, South Bend, Indiana 46628

BRISTOL INDUSTRY
630 E. LAMBERT
BREA

Date Shipped: 5/2/2013
Cust Order #: 588077
Amount Shipped: 1788.00

CA 92621 USA
Description: 0.0500" P/M.002 X 1.6500 P/M.003
C1050 Annealed Spring Steel Strip

Edge: # 3

Heat Number: NLPQ0909

Mill Coll ID:

Gibbs Coll ID:

Gibbs Number: 26271

To Certify that the material shipped against your above order number is in accordance with

Specification: ASTM A684-10 AMS 5085G

C: 0.5154	Mn: 0.6306	P: 0.0073	Sul: 0.0097
Si: 0.2257	Cr: 0.0596	Ni: 0.0834	Mo: 0.0245
Co: 0.0021	Cu: 0.1360	N2: 0.0076	Fe:
Ti: 0.0021	Al: 0.0558	Be: 0.0076	W:
Zn: 0.0021	Sn: 0.0227	Pb: 0.0076	Cb:
Ta: 0.0011	V: 0.0011		

PRE-HEAT

POST-HEAT

MIN

MAX

MIN

MAX

Tensile Strength:

Yield Strength:

Rockwell Hardness: B 84

B 84

Grain:

Elongation % in 2":

Alison Fink

SCANNED

CLIFFORD METAL
MATERIAL FREE FROM MERCURY CONTAMINATION
COUNTRY OF ORIGIN: USA
MILL SOURCE: DUFERCO

Gibbs Wire & Steel Company, Inc.
Certification Clerk

Alison Fink

ITEM# 982182

ROD SOURCE: NLMP PENNSYLVANIA

LAB APPROVED

DATE: JUN 04 2013 TECH: HT-LAB-26

Q.C. # CS28313

DFAR 252.225-7009

(252.225-7014 ALT 1)

GWS #: 631448

Tel: (574)234-6071; Fax: (574)237-0712



PENNSYLVANIA
DIVISION OF METAL INDUSTRIES

NLMK PENNSYLVANIA
16 HOSCHER BOULEVARD
FARMER, PA 16121
PHONE 724-289-8404

08/12/2012 11:47
CSTMB105

CERTIFICATE OF TEST FOR COIL 75267105 HEAT# NLPO0909

ORDER SPECIFICATIONS

SOLD TO: LAPHAM-HOKEY STEEL 8800 W. 72ND STREET CHICAGO IL 60638		CUSTOMER PO: A0587 REMARKS FOR COIL: 75267105 PRODUCT TYPE: CM PROJECT CATEGORIES: IN ORDERED GRADE: 1020 MC CALCULATED WEIGHT: 46,000 LBS ORDERED WEIGHT: 46,000 LBS WORK TOTAL: ~4600-4600		ORDER: 291065 SHEET CUT THICK: 2090.1A MATERIAL: 1020 MC HARDNESS RANGE: IN TENSILE: ELONGATION: REMARKS:		ITEM: 50239907 INDUSTRY SPEC: ASTM A500M CUSTOMER SPEC: CUSTOMER PART #: 1 CENTRE: 1 CUSTOMER NOTES:	
JOB # 291065-01 HEAT# NLPO0909	COIL # 75267105	SIZE 0500 x 42.0000	WEIGHT 19120	C: 52-MN: 88-P: 007-S: 010-B: 226-A: 105-CL: 14-M: 28-CR: 05-MQ: 12-SN: 823-TL: 102-V: 1011-MR: - N: 1078-B: 0001-CN: 1006-CE: -ZIR: -AS: -SB: -			

Elements with a reported value of " " were undetected, and thus are less than .001%.
Manufactured in the United States of America
NL MK Pennsylvania, Inc. certifies that the material listed herein has been tested in accordance with the methods prescribed in the governing specifications.
Based upon the results of such testing, the material conforms to the specifications. All testing has been performed using the current revision of the testing specifications.

Date: 7/25/12
Supervisor: Metallurgical Lab

LAB APPROVED
DATE: JUN 04 2013 TECH: RT-LAB-26
Q.C. # CS28313
DFAR 252.225-7009
(252.225-7014 ALT 1)

**CERTIFIED TEST REPORT**28 HICKEY DRIVE
PAWCATUCK, CT

06379

PHONE: 860-599-1600 FAX: 860-599-3220

PAWC 4/08/13
8:45:15
PAGE 1SOLD TO: 41753
GIBBS WIRE & STEEL
P O BOX 520Order Number: 32131 Q
Customer Order Number:
026271

SOUTHINGTON, CT

06489 0000

ATTENTION: BETH

Item# 1. 053 QUALITY BRAND COLD ROLL ANNEALED SPRING STEEL
1050 #3 SLIT EDGE.0500 X 6.7500 COIL
+- .0025 +- .005
ASTM A684-10A/GPS56-SREVO

Part Number: 86140RN

COUNTRY OF ORIGIN: USA MERCURY FREE AMS-5085G

MILL SOURCE: DUFERCO

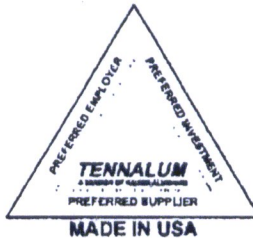
ACTUAL ROCKWELL: B 84

HEAT NUMBER		NLPQ0909
CARBON (C)		.5154
MANGANESE (MN)		.6306
PHOSPHORUS (P)		.0073
SULPHUR (S)		.0097
SILICON (SI)		.2257
ALUMINUM (AL)		.0558
BORON (B)		.0001
CALCIUM (CA)		.0005
CHROMIUM (CR)		.0596
COPPER (CU)		.1360
MOLYBDENUM (MO)		.0245
NICKEL (NI)		.0834
NITROGEN (N)		.0076
TIN (SN)		.0227
TITANIUM (TI)		.0021
VANADIUM (V)		.0011

LAB APPROVED
DATE: JUN 04 2013 TECH: [initials]
Q.C. #CS28313
DFAR 252.225-7009
(252.225-7014 ALT 1)LHS Corp. certifies that the above
figures are a true and correct
copy of those contained in the
records of the Company.*Kristine Schwarzenbach*

KAISER ALUMINUM FABRICATED PRODUCTS

Tennalum
309 Industrial Drive
Jackson, TN 38301
731-423-2811



CERTIFIED TEST REPORT
<http://Online.KaiserAluminum.com>

CUSTOMER PO NUMBER: 43-107214-1		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION: Cold Finished Round	
KAISER ORDER NUMBER: 685405	LINE ITEM: 1	SHIP DATE: 01/15/2013	ALLOY: 7075	TEMPER: T651	
WEIGHT SHIPPED: 2353 lbs.	QUANTITY: 435 pcs.	B/L NUMBER: 34887	DIAM/DAF/THICKS: 0.6875 in.	WIDTH: 0.000 in.	LENGTH: 144.0 in.
SHIP TO: Bralco Metals 15090 Northam Street La Mirada, CA 90638 USA			SOLD TO: Bralco Metals 15090 Northam Street La Mirada, CA 90638 USA		

Test Code: 1000 AC

Actual Physical Properties

Lot Number	LONG. UTS ksi	LONG. YTS ksi	LONG. ELONG. %
10040116	83.9 83.0 84.5 82.6	77.3 75.7 77.5 75.8	14.0 15.0 16.0 16.0

Chemical Composition, WT. % (Aluminum Remainder)

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	OTHERS EACH	OTHERS TOTAL	Lot
Actual	0.08	0.27	1.5	0.02	2.7	0.20	6.0	0.03			10040116
Max	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.15	
Min			1.2		2.1	0.18	5.1				

Specifications

Standard: ISO 9001, ASTM B211-12, AMS 4123H, AMS-QQ-A-225/9, AMS 4122L

LAB APPROVED
DATE: JUN 04 2013
Q.C. # NB28333
DFAR 252.225-7009
(252.225-7014 ALT 1)

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ("Kaiser") hereby certifies that the metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

John Rennekamp, Quality Manager

John Rennekamp

Plant Serial: 182708

Kaiser Order Number: 685405

Line Item: 1

Page 1 of 2

Sold to: BRISTOL INDUSTRIES PO: 588500 Part: Order No.: 365420

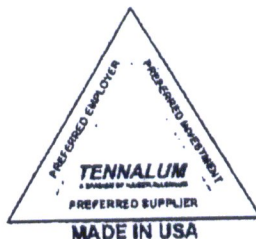
TR clerk signature: _____

Fredrick G. Gandy

SCANNED

KAISER ALUMINUM FABRICATED PRODUCTS

Tennalum
309 Industrial Drive
Jackson, TN 38301
731-423-2811



CERTIFIED TEST REPORT
<http://Online.KaiserAluminum.com>

Miscellaneous Notes

Made in USA

This material was melted and manufactured in the USA. Mercury is not a normal contaminant in aluminum alloys. Neither mercury nor any of its compounds were utilized by Kaiser Aluminum in the manufacture of this material. AS9100C:2009 The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law.

This material meets the requirements of (cold finished) T6 temper, AMS 4122L and QQ-A-225/9E (CANCELLED). Material is RoHS compliant.

LAB APPROVED

DATE: 04/2013 ECH:

Q.C. # N828333

DFAR 252.225-7009

(252.225-7014 ALT 1)

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC ("Kaiser") hereby certifies that the metal shipped under this order has been inspected and tested and found in conformance with the applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

John Rennekamp, Quality Manager

John Rennekamp

Page 2 of 2

Plant Serial: 182708
Kaiser Order Number: 685405
Line Item: 1

Sold to: BRISTOL INDUSTRIES PO: 588500 Part: Order No.: 365420

TR clerk signature: *Freddie G...*