McMASTER-CARR®

Certificate

330-995-5500
330-995-9600 (fax)
cle.sales@mcmaster.com

Purchase Order	Order Date	Placed By	McMaster-Carr Number	Number of Certificates
P1468702	12/8/2022	Jane Beattey	3185155-01	1

Line		Product	Ordered	Status	Certificate
1	89495K545	Corrosion-Resistant Round Tube, 316 Stainless Steel, 0.12" Wall Thickness, 2" OD, 4 Feet Long	2 each	2 each deliver December 9	188–6851

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

TUSCO TUBE

TW METALS TEST REPORTS APR 21 22 ACCEPTED BY

MILL TEST CERTIFICATE
ISO9001:2015/ EN10204 3.1

CUSTOMER: TW METALS
P.O.:US-2582
TW ORDER NO.M49445706
GRADE : ASTM A213/A213M-21b ; ASME SA213/SA213M-17 AVG WALL
ASTM A269/A269M-15A **TP316/316L**
COMMODITY: STAINLESS STEEL SEAMLESS TUBE
CONDITION: COLD FINISH /SOLUTION TREATED/PICKLED/PLAIN END/OD POLISHED 240 GRIT.

DATE: JANUARY 21, 2022
CERTIFICATE NO.:TC2022011510
HEAT NO. : J3311739

CHEMICAL COMPOSITION (%)

ELEMENTS		C	Si	Mn	P	S	Ni	Cr	Mo	Ti	Cu	N	Co		
SPEC	MIN						10	16	2						
	MAX	0.035	1	2	0.045	0.03	14	18	3						
RESULTS		0.012	0.50	1.01	0.023	0.001	10.08	16.38	2.04						

PHYSICAL PROPERTIES

Dimensions			Quantity		Tensile Properties			Hardness	Flattening	Flaring	Grain Size	Hydrostatic	I.C.T A262E	EDDY CURRENT
OD	W.T	LENGTH			Y.S 0.2%	T.S	EL	HRB						TEST (100%)
(INCH)	(INCH)	(FT)	FT	KG	MPa	MPa	≥35(%)	80max						
2.000	0.120	20	1100	1193	240	540	66	73	OK	OK	OK	/	OK	OK

REMARKS:
IN COMPLIANCE TO NACE MR0175-2019/MR0103
SOLUTION HEAT TREATMENT :1050°C X 1.5m/min
NO WELD REPAIR WAS PERFORMED
FREE FROM MERCURY CONTAMINATION
FREE FROM RADIATION CONTAMINATION
IC TESTING ACCORDANCE TO ASTM A262 E-SATISFACTORY
MELT AND MANUFACTURE COUNTRY: CHINA
RoHS COMPLIANT
100% PMI TESTED
MATERIAL TEST CERTIFICATES TO EN 10204/3.1
MATERIAL COMPLIANT WITH ISO 9001:2015
THE FOLLOWING CLAUSES ARE NOT APPLICABLE;
~ FAR BAA(FAR 52.225-1 BUY AMERICAN ACT-SUPPLIES)
~ DFARS BAA(DFARS 252.225-7001 BUY AMERICAN ACT & BAL. OF PAYMENTS PROG
~ FAR TAA(FAR 52.225-5 TRADE AGREEMENTS)
ALL MATERIAL PROVIDED UNDER THIS PURCHASE ORDER IS FREE OF
CONFLICT MINERALS IN ACCORDANCE WITH THE DODD FRANK ACT SECTION 1502

1.WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN TESTED AND THE TEST RESULTS ARE IN COMPLIANCE WITH THE TERMS OF THE PURCHASE ORDER OR CONTRACT OF TW METALS PO#M49445706

2. THE CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF TUSCO TUBE.

TUSCO TUBE
Q.A. PASSED
Liu Kai Jieh

MANAGER OF QUALITY ASSURANCE DEPARTMENT

ADD: NO.12, XUE'AN COMMUNITY ZONE, XUE'AN, RUGAO, NANTONG, JIANGSU PROVINCE, CHINA

Certificate: 188-6851