

SS-T2-S-035-20

**SANDVIK**

Sandvik Materials Technology

MATERIAL CERTIFICATE

Product Area Tube

982 Griffin Pond Rd, Clarks Summit, PA US 18411, Ph: 570-585-7500

www.smt.sandvik.com  
www.smt.sandvik.com/nafta

Cert#: 170029682

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55-T2-S-035-20

Plant Location: 982 Griffin Pond Road, Clarks Summit, PA 18411  
 Sold To: 8442 Ship To:  
 SWAGELOK MANUFACTURING COMPANY EDMONTON VALVE & FITTING INC  
 INDEPENDENCE OH EDMONTON AB  
 Customer Order No: Y58069 Certification Date: 20171011  
 Sandvik Order No: 332709/1

Work Order/Lot: 184299

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SWAGELOK SMS-00333 Rev. D, ASTM A632-04Cold Finished BRIGHT ANNEALED Seamless Tube  
Type MT 316/MT 316L/TP316/TP316LSize: .125" OD X .035"  
Heat: 546098

## ANALYSIS %

	C	Si	Mn	P	S	Cr	Ni
Heat	.020	.37	1.63	.032	.009	17.28	13.09
Prod	.025	.38	1.60	.032	.008	17.34	13.16
	Fe	Mo	Cu	Al	Pb		
Heat	2.63	.30	.003				
Prod	2.67	.30	.003				

## Mechanical Tests:

Yield Strength				Tensile Strength		Elongation in %			Reduction Of Area	
0.2%	1.0%	psi	MPa	psi	MPa	E2"	E10"	E4d	E5d	%
41760	288.0		N/A	80910	558.0	43	N/A	N/A	N/A	N/A
40600	280.0			81630	563.0	42				

Hardness Test Results: 77HRBW, 78HRBW

Flare Test per ASTM A450/A1016 and ASME SA450/SA1016,

No. samples: 2 Result: Acceptable

Flattening Test per ASTM A450/A1016 and ASME SA450/SA1016:  
Acceptable

Tensile Test sample width (1=Full-Size 2=1/2" Strip): 1

Country Of Origin: Sweden

100% Positive Material Identification performed

All material subjected to a final solution annealing heat treatment with material at a temperature of 1900 deg. F minimum followed by rapid quenching to below 800 deg. F in less than three (3) minutes.

The material has not come in contact with Mercury or Mercury containing compounds.

No welding has been performed on this material.

Material has been eddy current tested in accordance with ASTM A450, ASTM A1016 and is acceptable.

Material is capable of passing the ASTM A262 Practice "E".

Inspection certificate produced in accordance with

EN 10204 3.1 (formerly EN 10204 3.1.B).

No unauthorized alterations. The contents of this Inspection Certificate may not be modified or revised in any way without the prior written approval of Sandvik Materials Technology. Unauthorized alterations to the Inspection Certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by

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fines, imprisonment, or both. This Inspection Certificate may be copied only in the manner and for the purposes specified in EN 10204:2004, Section 6. Contravention of this notice will be prosecuted to the fullest extent of the applicable law(s).

Material has been manufactured/supplied in accordance with Sandvik Materials Technology Quality Manual-Standard Products Revision 17 dated Jul. 8, 2016. Quality system has been approved to ISO 9001:2008 (Cert# 10004407, 14SEP18) No unauthorized alterations. The content of this inspection certificate may not be modified or revised in any way without the prior written approval of Sandvik Materials Technology. Unauthorized alterations to the inspection certificate, including introduction of false, fictitious or fraudulent statements or entries, may be punishable by fines, imprisonment, or both.

Contravention of this notice will be prosecuted to the fullest extent of the applicable laws/

This is to certify that the contents of this certificate are correct and accurate as contained in Sandvik's records, and that all above test results and operations performed are in compliance with the requirements of the purchase order and the specification(s) listed above.

Electronically Generated Certificate-Valid without signature  
John Scherer, Quality Mgr-Tube  
10 (SWINST=1/8-316 R2) (10) CF (MD0249)