

M A T E R I A L C E R T I F I C A T E

Sandvik Materials Technology

P.O. Box 1220, Scranton, PA 18501 PH. (570) 585-7500

Plant Location: 982 Griffin Pond Road, Clarks Summit, PA 18411

Sold To: 632580

Ship To:

SANDVIK DE MEXICO

GAISA FORWARDING INC

TLALNEPANTLA, EDO MEXICO

LAREDO TX

Customer Order No: 450503

Certification Date: 20031008

Sandvik Order No: 13743/3

Work Order/Lot: 512045

ASTM A312-01a, ASME SA-312, ASME Section II
2001 Edition; 2003 Addenda, NACE MR0175-2000 (Austenitic)
Hot Finished Process Annealed Seamless Pipe
Type TP316/TP316L (UNS S31600/S31603) Size: 2" SCH 40
Heat: 459560

ANALYSIS %

	C	Si	Mn	P	S	Cr	Ni
Heat	.012	.38	1.70	.031	.012	16.81	11.31
Prod	.011	.38	1.69	.032	.011	16.76	11.25
	Fe	Mo	Al	Pb			
Heat	2.07	.003					
Prod	2.07	.003					

Mechanical Tests:

Yield Strength		Tensile Strength		Elongation in %				Reduction Of Area %		
0.2%	1.0%	psi	MPa	psi	MPa	E2"	E10"	E4d	E5d	
46600	321.4	N/A		88900	613.1	44	N/A	N/A	N/A	N/A

Hardness Test Results: 81HRB, 82HRB

Hydrostatic Test (psi): 2500

Flattening Test per ASTM A530: Acceptable

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

Corrosion Test per ASTM A262 Pr.E, MIL-P-24691/3 and

MIL-P-1144D. No. samples: 1 Result: Acceptable

Country Of Origin: United States

All material subjected to a final solution annealing heat treatment with material at a temperature of 1900 deg.F. minimum followed by rapid quenching.

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

No welding has been performed on this material.

Material has been manufactured/supplied in accordance with Sandvik Materials Technology Quality Manual-Standard Products Revision 5 dated February 6, 2003. Quality system has been approved to ISO 9001:2000.

Certificate produced in accordance with EN 10204 (DIN 50049) 3.1.B.

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.

Veta W. Cator
Authorized Representative

Kurt Revak, Quality Specialist
30 (STKA312 R14) (32) (DDT)