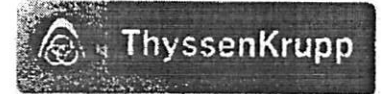


ThyssenKrupp VDM

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 Bar and Forgings EMail thomas.gymnich@thyssenkrupp.com



Order No. 378173 Delivery No. 99340 Trademark NICORROS 2.4360

Sign of Manufacturer



114813

Inspection certificate 87951/0 Page 1 of 2
 DIN EN 10204/01.05 3.1 printed: 28.01.2011

ThyssenKrupp VDM USA, Inc. for
 Corrosion Materials, Baker
 306 Columbia Turnpike
 USA-07932 Florham Park

Product
 Bar, round, forged, stress relieved, machined, slightly oxidized

Specification	Material
ASTM B 164-03 (reapproved 08)	UNS-N04400
ASME SB 164-2009b	UNS N04400
ASTM B 564-06 applicable for forgings	UNS N04400
ASME SB 564-2007 applicable for forgings	UNS N04400
QQ-N-281D Amd. 2 Class A / Form 1 10.85	Class A
NACE MR0175-2003	

Item	Pcs	Wht [kg]	Dimension [mm]	Cast	Lot
9	1	2090	279,40 Ø x 3048-4267,2	114813	103428899 11.000" dia x 10-14" NL

Purchase Order No. 086782 / TKVDMUSA 25570

Analysis (weight %)
 LE=combustion analysis, OE=optical emission analysis, RF=XRF

ASTM B 164-03 (reapproved 08); ASME SB 164-2009b; ASTM B 564-06 applicable for forgings; ASME SB 564-2007 applicable for forgings

Cast	Melting Pr.	C	S	Ni	Mn	Si	Ti	Cu	Fe	Al	Co
114813	EFVD	0,13	<0,002	R63,71	1,19	0,14	0,020	32,68	1,95	0,060	0,03
	top Meth	LE	LE	RF	RF	RF	RF	RF	RF	RF	RF

QQ-N-281D Amd. 2 Class A / Form 1 10.85

Cast	Melting Pr.	C	S	Ni	Mn	Si	Ti	Cu	Fe	P	Al	Pb	Sn	Zn	Co
114813	EFVD	0,1	<0,002	63,67	1,2	0,1	0,020	R32,63	2,0	<0,002	0,060	<0,001	<0,002	<0,01	0,03
	top Meth	LE	LE	RF	RF	RF	RF	RF	RF	RF	RF	OE	OE	RF	RF

Sample Condition		Tensile Test						Hardness Test			Grain Size	
stress relieved		1 ASTM E 8 / longitudinal specimen						1 ASTM E 18			1 ASTM E 112	
Lot	Sample No.	Temp [°C]	Yield0.2% [ksi]	Yield1.0% [ksi]	Tensile	Elongation A [%]	RoA [%]	HRBW				
103428899	0-F							1 77 surface			1 No 5.0	
103428899	1A-E1	1 RT	49,2		81,5	4D 44						

HEAT# 114813

 TRACER# 644460

ISO 9001, AS9100, EN 9001
 LRQA Approval
 KLN 4000941/E

We herewith certify, that the material is in conformance with the above mentioned specifications Mark of the Inspector E
 This certification was created by machine and is valid without signature
 Thomas Gymnich, authorized inspection representative Date of release: 01.02.2011
Q

87951-O-E
 This certified test report shall not be reproduced except in full, without the written approval of ThyssenKrupp VDM. The recording of false, fictitious or fraudulent statements or entries on the certificate may be punished as a felony under federal law.



Heat Treatment	Lot
550°C/2:30Vair	103428899

Spectrographic analytical mixup test: without objection
Dimensional and visual inspection performed: without objection
No mercury contamination; no Radium, Luminous or Alpha source materials were used in the manufacture or testing of the items furnished.
No weld repairs performed.
Country of Origin and Melt: Germany
Certified acc. to Pressure Equipment Directive (97/23/EC) by TÜV-CERT-Certification body for pressure equipment of the TÜV Nord: notified body, reg-no. 0045.

HEAT# 114813

TRACER# 644460