

Sample Result Name 9919 (DIA-40 MM) HNO- 166545	Type Unknown	Measure Date Time Friday, September 05, 2014	Recalculation Date Time 12:35:55 PM	Origin Measured
Method Name Fe-30-MO	Method Version	Operator Name SARA SAE	Check Type None	Check Status Not Used
Grade Verification Name	Grade Verification Similarity 0	Correction Type None	Type Corr Sample Name	Grade Search Name
Grade Search Similarity 0	Type None	Status Not Used	Outlier Removal	

Sample Name
9919 (DIA-40 MM) HNO- 166545

Grade

	C Conc %	Si Conc %	Mn Conc %	P Conc %	S Conc %	Cr Conc %	Mo Conc %	Ni Conc %	Al Conc %	Co Conc %	Cu Conc %	Nb Conc %	Ti Conc %	V Conc %	W Conc %	Pb Conc %	Sn Conc %	As Conc %	Zr Conc %	
4	0.051	0.37	0.74	0.015	0.015	22.18	3.21	40.96	0.12	0.14	1.66	0.054	0.63	0.050	<0.040	0.012	0.017	<0.005	<0.003	
5	0.047	0.39	0.74	0.016	0.018	22.14	3.16	41.09	0.12	0.14	1.68	0.049	0.62	0.049	<0.040	0.012	0.020	0.005	<0.003	
6	0.047	0.40	0.74	0.015	0.018	22.35	3.17	40.82	0.12	0.14	1.65	0.051	0.62	0.048	<0.040	0.011	0.018	0.006	<0.003	
Rep	0.049	0.38	0.74	0.015	0.017	22.22	3.18	40.96	0.12	0.14	1.66	0.051	0.62	0.049	<0.040	0.012	0.018	0.005	0.003	
Min Cal	0.006	0.005	0.004	0.003	0.002	0.005	0.003	0.005	0.003	0.005	0.002	0.005	0.0010	0.002	0.040	0.010	0.002	0.005	0.003	
Mean	0.049	0.38	0.74	0.015	0.017	22.22	3.18	40.96	0.12	0.14	1.66	0.051	0.62	0.049	<0.004	0.012	0.018	<0.005	<0.003	
Max Cal	3.00	5.04	18.12	0.18	0.30	36.00	10.20	55.2	6.24	21.60	7.44	3.60	3.60	12.00	7.32	0.13	0.27	0.13	0.19	
	Ca Conc %	B Conc %	Fe Conc %																	
4	0.0009	0.003	29.72																	
5	0.0007	0.003	29.68																	
6	0.0006	0.003	29.74																	
Rep	0.0008	0.003	29.71																	
Min Cal	0.0005	0.0005																		
Mean	0.0008	0.003	29.75																	
Max Cal	0.016	0.025																		

Qualify in TN-825 as
per Sec 28-724A
Dupaly

certificate 121585/0
DIN EN 10204/01.05 3.1

Order No. 440426 Delivery No. 30074 Purchase Order No. OK/092/12

Sara Sae Private Limited

7/1, Pritam Road
IND - 248001 (Uttarakhand) IndiaTrademark
VDM® Alloy 825
NICROFER 4221
2.4858EN ISO 9001, AS 9100
LRQA Approval
KLN 4000941/E
ASME QSC-671, expiration date:
March 16, 2015Product
Bar, round, hot rolled, annealed, machined

Specification

FMC M40116 Rev. C

mechanical properties from prolongation of the bar; Hardness max. 210 HB

Material

UNS N08825

m	Pcs	Wht [kg]	Dimension [mm]	Cast	Lot
2	16	1531	56,00 Ø x 3000-6000	166545	104063453

Analysis (weight %)

LE=combustion analysis

RF=XRF

FMC M40116 Rev. C

Cast	Melting Pr.	C	S	Cr	Ni	Mn	Si	Mo	Ti	Cu	Fe	Al
166545	EF/VD	0,01 LE	0,002 LE	22,7 RF	39,3 RF	0,7 RF	0,3 RF	3,2 RF	0,8 RF	1,9 RF	R30,7	0,1 RF

Sample Condition
annealed

Tensile Test

1 ASTM E8 - 13a / longitudinal specimen

Temp Yield0.2% Yield1.0% Tensile Elongation
[°C] [MPa] [MPa] [MPa] A [%] A [%]

Hardness Test

1 ASTM E 10 - 12

HBW 10/3000

Lot	Sample No.	Temp [°C]	Yield0.2% [MPa]	Yield1.0% [MPa]	Tensile [MPa]	Elongation A [%]	Elongation A [%]	RoA [%]
104063453	1-A1	1 RT	284		643	4D	58	
104063453	5-A1							

Heat Treatment

Lot

950°C/01:20h/Water 104063453

Spectrographic analytical mixup test/PMI check: 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.

We herewith certify, that the material is in conformance with the above mentioned specifications

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Thomas Gymnich, authorized inspection representative

Date of release: 19.02.2014

Mark of the
Inspector

Q

E

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