

## Material Test Report

Heat Code: JFS

13770 Industrial Rd. An Ameri-Forge Group Company Houston, TX 77015

ISO 9001:2008 Certified

Sales: (713) 868-4421 Fax: (713) 455-8366

Spec: ASTM A105/A105M-(10)/ASME SA 105/SA 105M-(08a) Section 54940 TULTITLAN, ALAMEDAS 66-0 PLESA ANAHUAC Y CIAS SA DE CV AV. VALLE EDO, DE LAS Supplier: CMC Item Code: 0151600102-0020F PO: 10492 Item Desc: Fig 06.00 0150 WN Sales Order: RF HX II Part Supplier Heat: 95070 Qty Shipped: 7 3021470 20 Line: 15

Element         (%wt)         Ladle         Product         EPCRA         CAS#         Element         (%wt)         Ladle         Product         EPCRA         CAS#           C         Carbon         0.20         Cr         Chromitum         0.07         7440-47-3           Mn         Manganese         1.04         7439-96-5         Mo         Molybdenum         0.02           P         Phosphorous         0.010         V         Vanadium         0.003         0.003           S         Sulphur         0.020         Cb         Columbium         0.001         0.001           S1         51itoon         0.24         Cb         CuNicrmo         0.401         0.401           Cu         Copper         0.23         7440-02-0         CrMo         0.091         0.091           N1         Nickel         0.08         7440-02-0         GrMo         0.091         0.091	11	$\overline{a}$	-	111		) to	-	 
nt         (%wt)         Ladle         Product         EPCRA         CAS#         Element         (%wt)         Ladle         Product         EPC           arbon         0.20         Cr         Chromium         0.07         ✓           anganese         1.04         ✓         7439-96-5         Mo         Molybdenum         0.02           bosphorous         0.020         V         Vanadium         0.003         0.001           ulphur         0.020         C.E.         C.E.         0.41           ilitoon         0.24         C.E.         CuNicrMo         0.401           opper         0.23         ✓         7440-02-0         CrMo         0.491           ickel         0.08         ✓         7440-02-0         CrMo         0.091	ğ		ਤੋ			ź. ₽4	N.	
(%wt)         Ladle         Product         EPCRA         CAS#         Element         (%wt)         Ladle         Product         EPC           0.20         0.20         Cr. Chromium         0.07         V           0.010         V 7439-96-5         Mo Molybdenum         0.02           0.020         V Vanadium         0.003         0.001           0.24         C.E.         0.41           0.23         V 7440-50-8         CuNicrmo         0.401           0.08         V 7440-02-0         Crmo         0.091	lent.	Car	Mai	Pho	Sul	2 12	NIC	
(%wt)         Ladle         Product         EPCRA         CAS#         Element         (%wt)         Ladle         Product         EPC           0.20         0.20         Cr Chromium         0.07         ✓           0.010         ✓ 7439-96-5         Mo Molybdenum         0.02         0.003           0.020         V Vanadium         0.001         0.001           0.24         Cr.E.         Cb Columbium         0.001           0.23         ✓ 7440-50-8         CuNicrMo         0.401           0.08         ✓ 7440-02-0         CrMo         0.091		cbon	yan	ndsc	րիս	Lico	kel	
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Adle         Product         EPCRA         CAS#         Element         (%wt)         Ladle         Product         EPC           0.20         Cr         Chromium         0.07         V           1.04         7439-96-5         Mo         Molybdenum         0.02           0.010         V         Vanadium         0.003           0.020         Cb         Columbium         0.001           0.24         C.E.         0.41           0.23         7440-50-8         CuNicrmo         0.401           0.08         7440-02-0         Crmo         0.091	3			TA.				
Adle         Product         EPCRA         CAS#         Element         (%wt)         Ladle         Product         EPC           0.20         Cr         Chromium         0.07         V           1.04         7439-96-5         Mo         Molybdenum         0.02           0.010         V         Vanadium         0.003           0.020         Cb         Columbium         0.001           0.24         C.E.         0.41           0.23         7440-50-8         CuNicrmo         0.401           0.08         7440-02-0         Crmo         0.091								
Product         EPCRA         CAS#         Element         (%wt)         Ladle         Product         EPC           0         ✓ 7439-96-5         Mo         Molybdenum         0.07         ✓           1         ✓ 7439-96-5         Mo         Molybdenum         0.02            20         V         Vanadium         0.003            20         C.E.         C.E.         0.001            3         ✓ 7440-50-8         CuNicrMo         0.401         0.401           3         ✓ 7440-02-0         CrMo         0.091         0.091	٦	0		0	0	<b>5</b> 0	0	
Product         EPCRA         CAS#         Element         (%wt)         Ladle         Product         EPC           Cr         Chromium         0.07         ✓           V         7439-96-5         Mo         Molybdenum         0.02            V         Vanadium         0.003             Cb         Columbium         0.001          0.41           CrE.         CuNicrMo         0.401         0.401           ✓ 7440-02-0         CrMo         0.091         0.091	음	.20	0	.01	.021	ν ίν 4 κ	80.	
Product         EPGRA         CAS#         Element         (%wt)         Ladle         Product         EPC           ✓ 7439-96-5         Cr         Chromium         0.07         ✓           ✓ 7439-96-5         Mo         Molybdenum         0.02            V         Vanadium         0.003            Cb         Columbium         0.001            Cl.E.         0.41         0.401         0.401           ✓ 7440-02-0         CrMo         0.091         0.091				9	ں			
EPCRA         CAS#         Element         (%wt)         Ladle         Product         EPC           V         7439-96-5         Mo         Molybdenum         0.02            V         Vanadium         0.003            Cb         Columbium         0.001            C.E.         0.41         0.401           V 7440-92-0         CrMo         0.091								
EPCRA         CAS#         Element         (%wt)         Ladle         Product         EPC           V         7439-96-5         Mo         Molybdenum         0.02            V         Vanadium         0.003            Cb         Columbium         0.001            C.E.         0.41         0.401           V 7440-92-0         CrMo         0.091	ğ							
CAS#         Element         (%wt)         Ladle         Product         EPC           439-96-5         Cr Chromium         0.07         *           439-96-5         Mo Molybdenum         0.02         .           V Vanadium         0.003         .           Cb Columbium         0.001         .           440-50-8         CuNicrMo         0.401           440-02-0         CrMo         0.091								
CAS#         Element         (%wt)         Ladle         Product         EPC           439-96-5         Mo         Molybdenum         0.07         V           439-96-5         Mo         Molybdenum         0.02            V         Vanadium         0.003            Cb         Columbium         0.001            440-50-8         CuNicrMo         0.401         0.401           440-02-0         CrMo         0.091         0.091	띩		*					
Element (%wt) Ladle Product EPC Cr Chromium 0.07 / Mo Molybdenum 0.02 V Vanadium 0.003 Cb Columbium 0.001 C.E. 0.41 CuNiCrMo 0.091 CrMo 0.091	ŖΝ		7			`` ~	, ,	
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ent         (%wt)         Ladle         Product         EPC           Chromium         0.07         V           Molybdenum         0.02         V           Vanadium         0.003         V           Columbium         0.001         V           CrMo         0.401         V           0.091         0.091         V			ပ်ာ			ά	ဝ်	
ent         (%wt)         Ladle         Product         EPC           Chromium         0.07         ✓           Molybdenum         0.02         ✓           Vanadium         0.003            Columbium         0.001            Columbium         0.41            CrMo         0.401            0.091	ш	Ω	<u> </u>	<	C	ი ი	റ്റ	 •••
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(%wt) Ladle Product EPC  m 0.07	ᇙᆝ	- 3 	2			otra n	rMo	
(%wt) Ladle Product EPC) 0.07	lent	Chro	Moly	Yana	b Colu	uNicrMo	rMo	
Product EPC	ent	Chromium	Molybden	Yanadium	b Columbiu	uNicrmo	rMo	
Product EPC	ent (%w	Chromium	Molybdenum	Yanadium	b Columbium	uN1CrMo	rMo	
Product EPC	nent (%wt)	Chromium	Molybdenum	Yanadium	b Columbium	uN1CrMo	rigio	
Product EPC	t (%wt)	Chromium	tenum		b Columbium	uNiCrMo		
	t (%wt)	Chromium 0.0	tenum		Lum	uNicrmo 0.4		
	t (%wt)	Chromium 0.07	tenum		Lum	uNicrmo 0.401		
	t (%wt) Ladle	Chromium 0.07	tenum		Lum	uNicrmo 0.401		
EPCRA CAS#  7440-47-3	t (%wt) Ladle	Chromium 0.07	tenum		Lum	uNicrmo 0.401		
PCRA CAS# ✓ 7440-47-3	t (%wt) Ladle	Chromium 0.07	tenum		Lum	.E. 0.41		
7440-47-3	t (%wt) Ladle Product	Chromium 0.07	tenum		Lum	.E. 0.41		
CAS# 40-47-3	t (%wt) Ladle Product EPCI	m 0.07	tenum		Lum	.E. 0.41 uN1CrMo 0.401		
S# 47-3	t (%wt) Ladle Product EPCI	m 0.07	tenum		Lum	.E. 0.41 uNiCrMo 0.401		
	t (%wt) Ladle Product EPCI	m 0.07	tenum		Lum	uN1CrMo		
	t (%wt) Ladle Product EPCI	m 0.07	tenum		Lum	uN1CrMo 0.401		

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No Weld repair performed. Chemical Analysis results shown are actual. Forgings are capable of passing hydrostatic test compatible with the appropriate rating. Elongation taken from a round specimen. All material supplied under this order is certified to be free of mercury contamination and no mercury bearing equipment used in manufacturing, fabrication or testing. Yield strength was determined using the 0.2% offset method. No weld repair performed on this product. Product compliant with NACE MR0175, latest edition and dimensions to ASME B16.5 material Was

EPCRA Supplier Notification: This product may contain one or more toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act (Title III of the Superfund Amendments and Reauthorization Act of 1986) and 40 C.F.R. Part 372. Potentially reportable chemicals are incitcated with a checkmark in the "EPCRA" column and a Chemical Abstract Services (CAS) registry number is provided for each such chemical in addition to the percent by weight of the chemical present in this product. It is your responsibility alone to determine whether your facility is required to submit a Toxic Release Inventory Report under EPCRA Section 313.

Certification No.: 207619

Certification Date: 5/11/2011

Nicholas Tepovich -Metallurgic Lab Manager