



# Material Test Report

Heat Code: AVN

An Ameri-Forge Group Company

13770 Industrial Rd., Houston, TX 77015

ISO 9001:2000 Certified

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

PLESA ANAHUAC Y CIAS SA DE CV AV. VALLE DE LAS ALAMEDAS 66-0 54940 TULTITLAN, EDO MEX	PO: 5101	Sales Order: 66536	Line: 14
	Item Code: 0301600101-0020F		Qty Shipped: 6
	Item Desc: FLG 06.00 0300 WN RF STD A105 NHT COFFR		
	Supplier: MACSTEEL		Supplier Heat: 4M65525
Spec: ASME SA-105/SA-105M 2004 Section II/ASTM A105/A105M-03			

Element	(%wt)	Ladle	Product	EPCRA	CAS#	Element	(%wt)	Ladle	Product	EPCRA	CAS#
C	Carbon	0.20				Cr	Chromium	0.13		✓	7440-47-3
Mn	Manganese	1.06		✓	7439-96-5	Mo	Molybdenum	0.020			
P	Phosphorous	0.012				V	Vanadium	0.005			
S	Sulphur	0.008				Cb	Columbium	0.002			
Si	Silicon	0.18				C.E.		0.426			
Cu	Copper	0.19		✓	7440-50-8	CuNiCrMo		0.42			
Ni	Nickel	0.08		✓	7440-02-0	CrMo		0.15			

Mechanical			Other		
Test Lab	AFG		EF		Y
Test Bar Size	SACRIFICIAL PIECE				
HBW	167-167				
Elg (%)	30.0				
RA (%)	63.0				
Tensile Specimen Size (in)	0.495				
Tensile (ksi)	82.4				
Yield (ksi)	48.3				
Gauge Length	2.00				

Product compliant with NACE MR0175 / ISO 15156, latest edition and dimensions to ANSI B16.5  
 Product compliant with and meets all requirements of ASTM A105/ASME SA105, latest edition.

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 was used in manufacturing, fabrication or testing. Yield strength was determined using the 0.2% offset method.

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 1988) and 40 C.F.R. Part 372. Potentially reportable chemicals are indicated 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.: 149811  
 Certification Date: 9/23/2008

Nicholas Tepovlch - Metallurgic Lab Manager