



	%C	%Si	%Mn	%P	%S	%Ni	%Mo	%Cr	%Cu	%Al	%Sn	%V	N <sub>2</sub> ppm	O <sub>2</sub> ppm	H <sub>2</sub> ppm	%Ti	CaPPM	Bppm	%As	%Sb	%Pb
REF Q	0.140/0.190	0.150/0.400	1.000/1.300	0.035Max	0.035Max	0.250Max		0.800/1.100	0.300Max	0.020Min		0.010Max	80.0/110.0	20.0Max	2.00Max	0.003Max	20.000Max	5.000Max			
ACT	0.1670	0.2330	1.1530	0.0190	0.0210	0.0220	0.0080	1.0200	0.0120	0.0260		0.0040	88.000	9.000	1.530	0.0020	14.0000	1.0000			

## MECHANICAL PROPERTIES

## METALLURGICAL PROPERTIES

SPARK/ SPECTRAL	STEP DOWN TEST	MACRO ETCH RESULTS/ASTM E-381)	INCLUSION RATING (ASTM - E-45) Method 'A' Plate I (Worst Fields)								GRAIN SIZE (ASTM E-112)	SURFACE DEFECT LEVEL (mm)	CORE HARDNESS (OILQUENCH (HRC)	UPSET TEST RESULTS	TOTAL DEPTH OF DECARBURIZATION IN mm
			A		B		C		D						
			T	H	T	H	T	H	T	H					
OK	OK	C2R2S2Max	2.0	2.0	1.0	1.0	1.0	1.0	1.5	1.5	6 to 8	OK	NA	NA	0.40 mm Max
OK	OK	<C2/R2/S2	1.5	0.5	0.5	0.0	0.0	0.0	1.0	0.5	7.0	OK	NA	NA	0.36

2 MIP TEST: 100% DONE & FOUND OK.  
3 STEP DOWN TEST: OK AS PER JIS: G0556-1977.  
4 MICROSTRUCTURE: OK

**K.POMESH(Sr.GM-QAD)**