



## ATR Master Tape Specifications

### Magnetic Characteristics:

Coercivity $H_C$ :	365 Oe, BH
Retentivity $B_{RS}$	1590 Gs
Particle orientation:	Longitudinal

### Test Notes:

Nominal

### Recording Performance Test Reference:

Recorder model	Ampex-Aria ATR-102	
Record head gap length	1 mil	
Reproduce head gap length	0.12 mil	
Track width	200 mils nominal	
Tape Speed	30 ips, 76.2 cm/sec	
Playback equalization	17.5 us, AES	
Recording bias	1.4 dB over @ 20 kHz	See Recommended Bias chart below <sup>1</sup>
Bias osc. frequency	438 kHz	
Recording Level Reference	185 nWb/m = 0 VU	Ampex operating level
Frequency Pass Band	20Hz-20KHz	Equivalent wave length of 1.5 inches to 0.0015 mils

### Recording Performance:

Maximum Output Level 1 kHz at 3% 3 <sup>rd</sup> harmonic distortion	18 dB	
Saturation Output Level 1 kHz	23.5 dB	Level at which linearity exceeds 1 dB of input signal
10 kHz	16.1 dB	
16 kHz	15.2 dB	
Maximum linear operating level	10 dB	Linear frequency vs output -0.5 dB level through pass band.

3 <sup>rd</sup> Harmonic Distortion		1 kHz fundamental frequency
0 dB - Reference operating level	0.032 %	
+6 dB over operating level	0.096 %	
+10 dB over operating level	0.28 %	
+12 dB over operating level	0.49 %	
Signal to Noise ratio (Bias noise)	-68 dB	ASA , NAB A weighted
Peak Dynamic Range	86 dB	
Dynamic range ref to 1% 3 <sup>rd</sup> harmonic distortion	82 dB	1 kHz fundamental
Linear dynamic range	78 dB	Range in which frequency / wavelength response is linear ±0.3 dB tolerance
Print-through characteristic	-60 dB	1KHz tone on preceding wrap of tape stored for 24 hours on NAB reel at 72° F
<b>Physical Specifications:</b>		
Yield Strength	12 Lbs on ½"	Produces 3% elongation of a 6" test sample
Breaking strength	24 Lbs on ½"	Force that will break a 6" test sample
Coating thickness	0.73 mils	
Backcoating	0.040 mils	
Polyester base film	1.42 mils	
Total	2.28 mils	
Standard widths:		
¼"	0.246 inches	Tolerance +0.0 / -0.002"
½"	0.496 inches	
1"	0.996 inches	
2"	1.996 inches	
Backcoating resistance	≤ 30K Ohms	Per linear inch by pin probe
Oxide coating resistance	>10M Ohms	

Bias Current Recommendation <sup>1</sup>	10 kHz signal, 15 ips	10 kHz signal, 30 ips
1 mil gap length (ATR-Aria)	1.4 dB	0.6 dB
.5 mil gap length (Ampex)	3.0 dB	1.4 dB
.25 mil gap length (Studer)	4.5 dB	2.0 dB

<sup>1</sup>Note: ATR Master Tape has a wide acceptable bias current vs. distortion tolerance. The above recommendations are to be used as a guide only.