

**PLYMOUTH TUBE CO****MATERIAL TEST REPORT**

572 W. State Road 14 Winamac, IN 46996

voice: 219-946-3125 fax: 219-946-3154

QS-9000: 1998 and ISO 9002: 1994 & ANSI/ASQC Q9002-1994 Quality Management System
Registered by Rvc & ANSI-RAB ABS-QE ISO 9000 Certificate # 30296 (Jul/22/93)Date: 08/20/01 Customer P.O.: 4500063620 Order No: 22-34997 Signature: *Joe. Summerville* Sr. Lab Tech Page: 1 of 1

Customer:

REMINGTON ARMS COMPANY
RESEARCH & DEVELOPMENT

ELIZABETHTOWN KY 42701

Specification(s):

ASTM A-519-96 GR:1010

Grade: 1010

Melt Source:

KOPPEL STEEL

Method of Manufacture:

ELECTRIC ARC FURNACE MELTED
CONTINUOUS CAST
SILICON KILLED
COLD DRAWN SEAMLESS

Product Description:

1.442" OD X .321" NOM WA
REMINGTON DRAWING B-EXP7483
REF: PO# 399002

TRIAL ORDER- TRI-LOBE TUBE PER OFFER "B"

UNANNEALED

NDE & Other Tests:

CHEMICAL COMPOSITION (% WT.)

Heat No.	Sample	C	Mn	P	S	Si	Al	Cr	Mo	Ni	Pb	Cu	V	Ti	Sn	Zn	Ca	O	N
431051	Ladle	.09	.46	.007	.010	.19	.018	.11	.02	.09		.16	.003		.009				.0090
	Check	.10	.46	.007	.010	.19	.016	.11	.02	.09		.16	.003		.009				.0089

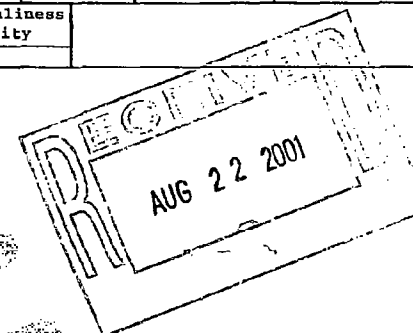
MECHANICAL PROPERTIES

Heat No.	Tensile (ksi)	Yield (ksi)	%Elong (in 2")	%R/A	Tensile (ksi)	Yield (ksi)	%Elong (in 2")	%R/A	Hardness (Rb)	Flat	Rev. Flat	Flare	Flange	Expand	Bend	Crush
431051									90 90							

METALLURGICAL PROPERTIES

Jominy Hardenability Results											MacroEtch Results			Grain Size	Decarburization	
Heat No.	J1	J2	J3	J4	J5	J6	J7	J8	J9	J10	S	R	C		OD	ID
431051														7		
Microcleanliness Ratings											SAM Ratings		Mag. Particle Cleanliness			
Heat No.	AT	AH	BT	BH	CT	CH	DT	DH	B-Type	D-Type	Frequency	Severity				
431051																

Material was manufactured in accordance with the Winamac Quality System Manual Revision 1, dated 9/1/00. We certify this material to be Mercury-free.
We hereby certify that the described material has been manufactured, inspected, and tested in accordance with the above specification(s) and satisfies the requirements.



BARBER - 5.22.06r0008637

ET35125

Confidential - Subject: 5.22.06r0008637 Order Williams V. Remington