

TABLE I

CHEMICAL COMPOSITIONS OF THE VARIOUS MATERIALS STUDIED (WT.%)

<u>MATERIAL</u>	<u>C</u>	<u>Mn</u>	<u>Si</u>	<u>Ni</u>	<u>Cr</u>	<u>Mo</u>	<u>Co</u>	<u>Ti</u>	<u>Al</u>	<u>Fe</u>	<u>OTHER</u>
Inconel 718	0.05	0.01	0.10	53	18.2	3.1	--	1.1	0.5	18.0	5.4 (Ta + Cb)
René 41	0.09	0.04	0.10	55	18.8	9.8	11.3	3.2	1.6	1.4	--
Udimet 630	0.03	0.15	0.10	57	7.3	2.9	0.10	1.0	0.6	17.5	--
Inco 713LC	0.06	1.0	0.10	72	13.5	4.5	0.11	0.80	6.1	0.2	0.01(B), 0.08(Zr) 2.4 (Ta + Cb)
250 Grade Maraging	0.006	0.01	0.02	18.31	--	4.81	7.33	0.46	0.10	Bal	--
350 Grade Maraging	0.009	0.01	0.02	18.12	--	4.80	12.37	0.66	0.45	Bal	0.50(W), 0.99( )
4320	0.19	0.76	0.29	1.89	0.82	0.30	--	--	--	--	--
4340	0.37	0.78	0.29	1.90	0.85	0.30	--	--	--	--	--
T.D. Nickel	--	--	--	98	--	--	--	--	--	--	2.0 (ThO <sub>2</sub> )

TABLE II

## MECHANICAL PROPERTIES OF T.D. NICKEL

<u>CONDITION</u>	<u>TEST TEMP.</u>	<u>0.2% YIELD STRENGTH</u> <u>KSI</u>	<u>TENSILE STRENGTH</u> <u>KSI</u>	<u>PERCENT</u> <u>ELONGATION</u>	<u>PERCENT</u> <u>R.A.</u>
As Received*	Room	103	115	23	57
Extruded, 50%	Room	125	132	16	65
Extruded, 78%	Room	135	144	20	68
As Received*	1600°F	31.8	32.2	0.05	9
Extruded, 78%	1600°F	33.8	34.0	2.0	8
As Received** + Extruded, 78%	Room	135	144	21	67

\* Pressed, Sintered, Hot Extruded, Cold Swaged and Recrystallized

\*\*Pressed and Sintered