



## Grandview Materials Inc.

8598 Cotter Street  
Lewis Center, Ohio 43035, USA  
sales@grandviewmaterials.com  
Phone: (614) 488-6998 Fax: (614) 467-3000

### CERTIFICATE OF ANALYSIS

#### FOR

#### NIOBIUM C-103 SHEET

---

CUSTOMER: N/A	SIZE: .125" x 10" x 20"
P/O No.: xxxx349	QUANTITY: 36 PIECE(S)
LOT No.: HNB 21306718	TEMPER: ANNEALED

---

#### 1. CHEMICAL ANALYSIS (% WT)

C	0.0012	Ni	0.0020
N	0.0048	Si	0.0015
O	0.0085	Ti	0.90
H	0.0010	Ta	0.25
Hf	9.52	W	0.21
Fe	0.0026	Zr	0.52
Mo	0.0025	Nb	REMAINDER

#### 2. TOLERANCES

THICKNESS (.125") DEVIATION	± 0.005"
WIDTH (10") DEVIATION	± 0.025"
LENGTH (20") DEVIATION	+0.125"/-0.000"

#### 2. MECHANICAL PROPERTIES

TENSILE STRENGTH (ksi min)	67
YIELD STRENGTH (ksi min)	45
ELONGATION (% min)	27

WE HEREBY CERTIFY THAT THE ABOVE PRODUCT IS CONFORMING TO THE SPECIFICATIONS, AND THERE IS NO MATERIAL ORIGINATED FROM DRC OR ADJOINING COUNTRIES IN AFRICA.