



ENGINEERING SPECIFICATION

SECTION II: CERAMICS

1.0 SCOPE

The suppliers listed in this specification have been approved to supply ceramics used in vacuum electron device bodies, as well as metallized ceramics. Where applicable, these suppliers receive periodic process surveillance through supplier audits and process audits coordinated between CPI Purchasing and Process Engineering. The use of suppliers not subject to this level of surveillance is strongly discouraged.

Note: Development materials may be ordered from suppliers other than those listed here with the written approval of Engineering and Materials.

The requirement to utilize these suppliers extends to ceramics procured by CPI's subassembly suppliers. Any deviation from this requirement shall necessitate a Supplier Deviation Request and a First Article Test and should only be considered when extreme urgency offsets the increased technical risk.

2.0 APPLICABLE DOCUMENTS

- P14-1 Ceramic Bodies
- P14-3 Lithia Alumina Silicate
- P14-5 Glazed Coating on Ceramic Bodies
- P14-6 Beryllia/Silicon-Carbide RF Lossy Material
- P14-7 Extruded Ceramics
- P14-8 Metallized and Nickel-Plated Ceramics and Sapphire
- P14-9 HP Boron Nitride
- P14-14 Gyrotron Sapphire Output Window
- P14-15 Heater Ceramics
- P14-17 Aluminum Nitride Composite RF Lossy Material
- P14-2001 APBN (Anisotropic Pyrolytic Boron Nitride)

3.0 MATERIAL TYPES

The ceramics and their suppliers are organized in the following tables according to material type: Alumina Pressed, Beryllia Pressed, Alumina Extruded, Beryllia Extruded, and Miscellaneous. The governing CPI Purchase Specification (P-spec) is applied.

Revision Information

Establish new Manufacturing Specification

Verify revision before use.



TITLE: APPROVED SOURCES FOR RAW MATERIALS AND PROCESSES

Spec. No.: P0-1, Sec. II

ECO No.: 149234 Rev. -

ECO Date: August 18, 2005

SECTION II: CERAMICS

ENGINEERING SPECIFICATION

P14-1					
Aluminum Oxide Ceramic: Die Pressed or Iso-Pressed					
Material	Supplier	Grinding Supplier		P14-8	
				Metallizing Supplier EIMAC (Cu-Ag)	Metallizing Supplier MPP (Cu-Au)
AD-94	CoorsTek	CoorsTek	B&H PFC Insaco	CoorsTek CPI Eimac	CoorsTek
FG-995					
AD-995					
Plasma Resist (AD-995-14)					
AL-300	MAC Wesgo	MAC Wesgo		MAC Erlangen CPI Eimac	MAC Wesgo
AL-500	MAC Duramic	MAC Duramic			
AL-995	MAC Erlangen	MAC Erlangen			

P14-1					
Beryllium Oxide Ceramic: Die Pressed or Iso-Pressed					
Material	Supplier	Grinding Supplier		P14-8	
				Metallizing Supplier EIMAC (Cu-Ag)	Metallizing Supplier MPP (Cu-Au)
Beramic 995	CBL	CBL	Accuratus	CBL	CBL
Thermalox 995	Brush Wellman	Brush Wellman	Ceramics Stratamet	None Approved	Brush Wellman

P14-7					
Aluminum Oxide Ceramic: Extruded					
Material	Supplier	Grinding Supplier			
AD-85	CoorsTek	CoorsTek	B&H PFC Insaco		
AD-94					
AD-995					
AD-998					
AL-300	MAC Wesgo	MAC Wesgo			
AL-500					
AL-995					
Alsimag 614	Vesuvius McDaniel	Vesuvius McDaniel			
Alsimag 771					
Alsimag 777					



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P14-7		
Beryllium Oxide Ceramic: Extruded		
Material	Supplier	Grinding Supplier
Thermalox 995	Brush Wellman	Brush Wellman; Accuratus Ceramics; Stratamet

Miscellaneous Ceramic Types Referenced by CPI P-Spec			
Material	Supplier	Grinding Supplier	P14-8
			Metallizing Supplier
AD-999 Vistal Alumina P14-15	CoorsTek	CoorsTek B&H PFC Insaco	N/A
AlN/SiC P14-17	Ceradyne		N/A
BeO/SiC P14-6	CBL		N/A
Boron Nitride, Hot-Pressed (HPBN) P14-9	GE Advanced Materials		N/A
Boron, Nitride, Anisotropic Pyrolytic (APBN) P14-2001	GE Advanced Materials		N/A
Lithia-Alumina-Silicate P14-3	Ferro Corp. (CP-20 Clay Petalite) GBC Materials Corp. (Zeramic No. 467)	B&H PFC Insaco	N/A
Sapphire P14-14	Crystal Systems	Insaco	None Qualified