



Truextent™ brand Acoustic Beryllium

The scope of this specification is to define the characteristics of Truextent brand Acoustic Beryllium that is made from a proprietary high purity grade of input material.

Acoustic Beryllium shall contain a minimum beryllium content of 98.0%. Foil manufactured to this specification is available in a variety of standard pre-formed dome shapes and sizes. These domes are available with and without surrounds. There are no tooling or non-recurring engineering charges incurred when ordering these standard domes.

It can also be supplied as flat stock in standard thickness ranges from 0.001 – 0.020 inches (25.4 – 508 μm), pre-cut into shapes such as rectangles, discs, and other configurations.

Acoustic Beryllium is available as two integrity grades classified as *Optically-Dense* and *As-Rolled*.

Optically-Dense Acoustic Beryllium is a premium grade and shall have no detectable light penetration when illuminated with a high-intensity light source applied to a restricted area on one side while viewed from the opposite side in a darkened room environment.

As-Rolled Acoustic Beryllium is a standard grade and is supplied in an "as produced" condition and is neither inspected nor guaranteed to be optically-dense.

The surface for both integrity grades shall be uniform in quality and condition, clean, sound, and free from foreign materials, or internal and external imperfections that are detrimental to fabrication. Standard surface finish shall be 63 microinches R_a or better.

Various thicknesses may be available in different surface finishes. Contact Brush Wellman Electrofusion for available foil sizes, tolerances and finishes.

Feature	Dimension (Inches)		Tolerance (Inches)
	From	To	+ / -
Thickness	0.001	0.020	10%
Diameter	0.15	8.0	0.003
Length / Width	0.20	3.0	0.015
	3.0	8.0	0.030

Tighter tolerances on formed parts are available on request. Please contact Brush Wellman-Electrofusion Products for price and availability.



Acoustic Beryllium can also be fabricated into custom shapes and sizes per customer specification. Brush Wellman Electrofusion offers complete engineering support to assist in developing your design.

All material is appropriately identified, packaged, and labeled to comply with applicable government regulations.

Property	Acoustic Beryllium	Magnesium	Titanium
Density, ρ	1,840 kg/m ³	1,740 kg/m ³	4,500 kg/m ³
Young's Modulus, E	303 x 10 ⁹ Pa	44 x 10 ⁹ Pa	116 x 10 ⁹ Pa
Speed of Sound $\sqrt{E/\rho}$	12,832 m/s	5,029 m/s	5,077 m/s
Tensile Strength (yield)	240 x 10 ⁶ Pa	115 x 10 ⁶ Pa	140 x 10 ⁶ Pa
Poisson's Ratio, ν	0.032	0.350	0.340
Thermal Conductivity	216 W/m-K	159 W/m-K	17 W/m-K

Health & Safety Note:

Handling solid beryllium material poses no significant health risks. However, as with many other industrial materials, materials containing beryllium may pose a health risk, if and when recommended safe handling practices are not followed and adhered to. Inhalation of airborne beryllium may cause a serious lung disorder in susceptible individuals. The Occupational Safety and Health Administration (OSHA) have set mandatory limits on occupational respiratory exposures. Read and follow the guidance set forth in the Material Safety Data Sheet (MSDS) before working with beryllium. For additional information on safe handling practices or technical data on beryllium, contact Brush Wellman, Inc.—Electrofusion Products.

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