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## What is the difference between PCD and CBN tools?

PCD, Polycrystalline Diamond, is the hardest man made material on the planet and has many advantages in manufacturing. PCD is a synthetic diamond produced by sintering together micron-sized diamond powder pieces with a metal binder, typically cobalt, under extreme pressure and temperatures. The cobalt adds toughness to the material and renders the material electrically conductive. The carbide substrate provides a brazeable layer of material.

PCD is recommended for machining non-ferrous and non-metallic materials such as aluminum, brass, composite materials, copper, fiberglass, green ceramics, and carbides.

Polycrystalline Cubic Boron Nitride, CBN, is the second hardest known material after PCD. CBN is produced by sintering together micron-sized pieces of cubic boron nitride with ceramic materials under extreme pressure and temperatures. The carbide substrate provides a brazeable layer of material.

CBN is extremely abrasion-resistant and has high thermal stability. CBN is recommended for machining ferrous materials such as hardened steels, cast iron, powdered metals, and superalloys.

High productive PCD and CBN tools can be resharpened or repaired as a smart economic option even after intensive usage. With over 37 years of experience in tool manufacturing, we offer new tools and tool reconditioning services for various types of used PCD and CBN tools.

You can rely on our engineers when looking for the best tool to fit your specific needs. Some typical information we need to get started include the following:

- The material you want to process with our tools.
- How long you plan to use the tools: days, weeks, or months.

- Surface finish quality requirements.

Providing such information, you are helping us to create the proper tool including the grade of PCD and CBN (from submicron to multi-modal grain size) to fit a variety of applications.

Whether you need PCD, CBN or different types of cutting tools, our engineers are here to help assist you make the best decision for your application. Feel free to request a quote or call us at (847) 740-6875.

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Since 1983, Composite Cutter Technology has been a top manufacturer of PCD cutting tools, PCD wear parts and precision machining parts for a variety of industries. Visit our website [compositecutter.com](http://compositecutter.com) to learn more about diamond tooling.