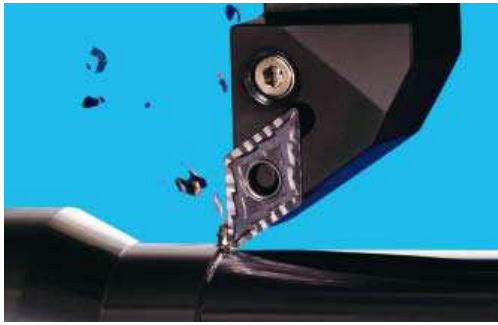


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## Cermet



### Cermet

KYOCERA is known as the leading manufacturer of cermets. Cermet is composite word with Ceramic and Metal. Typical materials used in cermets are TiC, TiN, TiCN and NbC. Designed to provide long tool life and excellent surface finishes, cermets combine toughness with superior wear resistance.

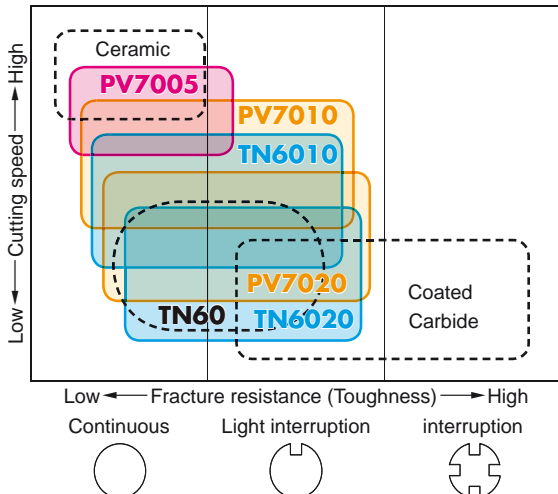
### PVD Coated Cermet

PVD Coated Cermet is coated on cermet substrate with a thin layer of high wear resistance and high adhesion resistance by PVD (Physical Vapor Deposition) technology. Generally because of the low processing temperature of PVD compared with CVD, PVD Coated Cermet features less deterioration and more bending strength.

## Features of Cermet and PVD Coated Cermet

Workpiece Material	Symbol	Color	Main Component (Coated Composition)	Advantages	
<div style="background-color: #0070C0; color: white; padding: 5px; text-align: center; border-radius: 5px;"> <b>P</b> Steel                 </div>	Cermet	<b>TN6010</b> (Super Micro-Grain)	Gray	TiCN	<ul style="list-style-type: none"> <li>Improved surface cermet with superior wear resistance and toughness</li> <li>Application: Economical uncoated cermet for steel</li> </ul>
		<b>TN60</b>	Gray	TiCN+NbC	<ul style="list-style-type: none"> <li>Typical choice cermet with superior wear resistance and toughness</li> <li>Application: Machining of steel and stainless steel</li> </ul>
		<b>TN6020</b> (Super Micro-Grain)	Gray	TiCN	<ul style="list-style-type: none"> <li>Super micro-grain cermet with superior wear resistance and toughness</li> <li>Application: First choice cermet for steel and stainless steel machining</li> </ul>
		<b>TN100M</b>	Gray	TiCN+NbC	<ul style="list-style-type: none"> <li>Tough cermet with improved oxidation resistance and thermal shock resistance</li> <li>Application: Milling of steel at high speed</li> </ul>
		<b>TC40</b>	Gray	TiC+TiN	<ul style="list-style-type: none"> <li>Good balance of wear resistance and toughness</li> <li>Application: Grooving and threading of steel</li> </ul>
<div style="background-color: #D9534F; color: white; padding: 5px; text-align: center; border-radius: 5px;"> <b>K</b> Cast Iron                 </div>	PVD	<b>PV7010</b> (Super Micro-Grain)	Blackish red	TiCN (MEGACOAT)	<ul style="list-style-type: none"> <li>Heat-resistant MEGACOAT on improved surface cermet with excellent wear resistance and toughness</li> <li>Application: Stable and improved tool life in steel cutting, excellent surface finish</li> </ul>
		<b>PV7020</b> (Super Micro-Grain)	Gold	TiCN (TiAlN+TiN)	<ul style="list-style-type: none"> <li>TiAlN base PVD coated on super micro-grain cermet</li> <li>Application: First choice PVD coated cermet for steel cutting, good balance of superior wear resistance and toughness</li> </ul>
		<b>PV7005</b>	Blackish red	TiC+TiN (MEGACOAT)	<ul style="list-style-type: none"> <li>Heat-resistant MEGACOAT on cermet with excellent wear resistance</li> <li>Application: High speed finishing of gray and nodular cast iron</li> </ul>

## Application Map



## New Cermet: PV7010, PV7005, TN6010

### MEGACOAT Cermet

- Improved tool life and high speed capability due to its superior heat resistance and hardness
- Stability improvement through prevention of crater wear (oxidation, diffusional wear)
- High thermal stability and surface smoothness provide excellent surface finish

**PV7010:** MEGACOAT for Steel

**PV7005:** MEGACOAT for Cast Iron

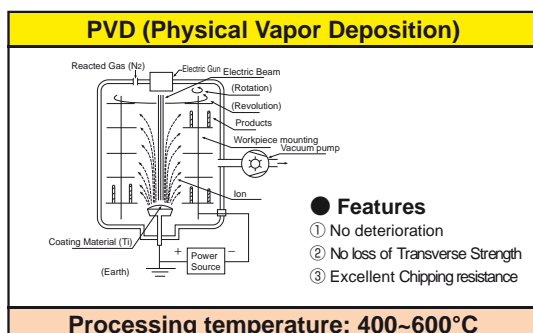


### Improved Surface Cermet

- Hard surface and tougher inner phase
- Achieves balance between wear resistance and toughness
- Economical uncoated cermet

**TN6010:** Uncoated Cermet for Steel

## Features of PVD



## Properties of PVD Coating

