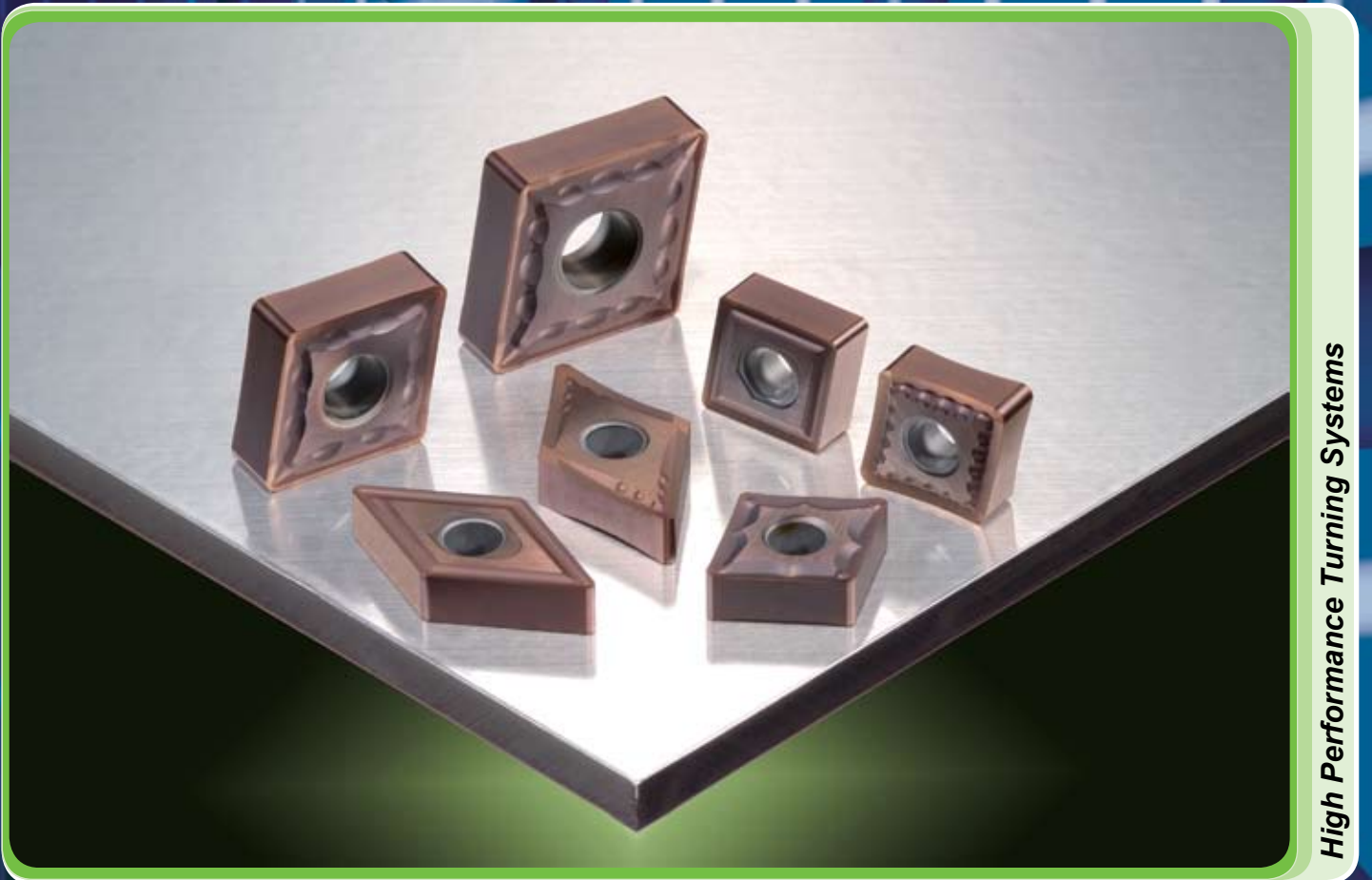
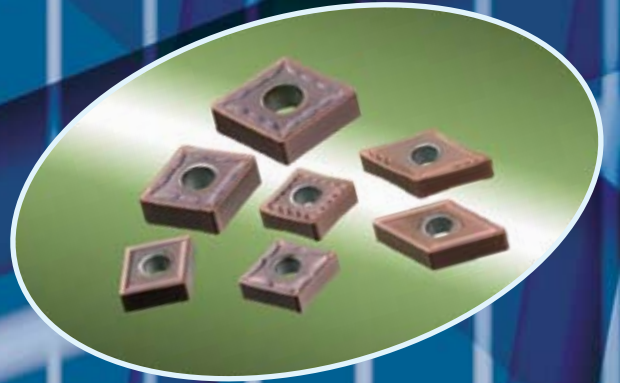




# SUMITOMO

CARBIDE - CBN - DIAMOND

# AC510U AC520U



High Performance Turning Systems

***PVD coated carbide grade for turning of exotic materials***



# AC510U/AC520U

for turning of exotic materials

**AC510U:** Finish turning of exotic materials

**AC520U:** General purpose turning of exotic materials

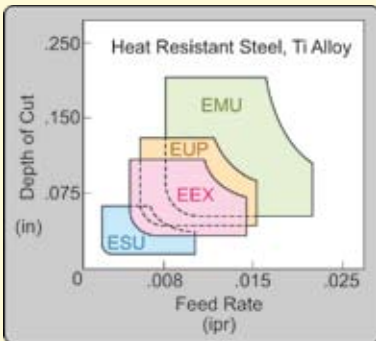


## Features & Benefits

- Super multi-layered coating with ultra-thin layers of TiAlN and AlCrN, alternately stacked up to 1,000 layers allowing for higher speed capabilities and higher wear resistance.
- Tool life is extended due to oxidation temperature increase by 200°C resulting in a 40% increase in coating hardness.

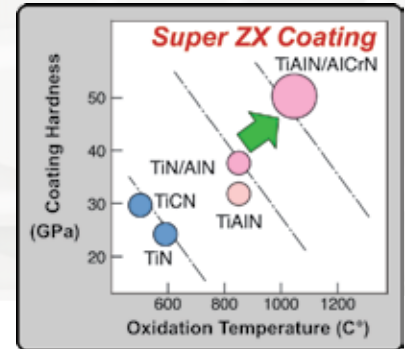
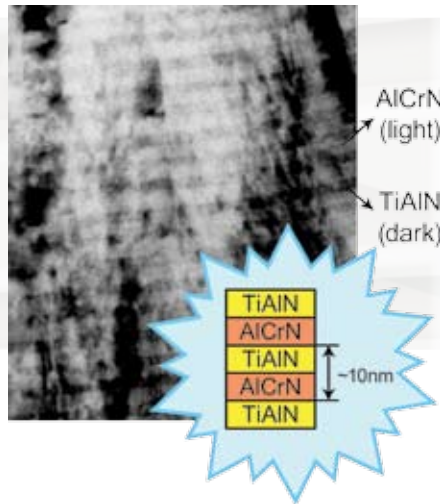
New PVD coated carbide grades for roughing, finishing, and medium cut machining of super alloy materials.

## Application Range



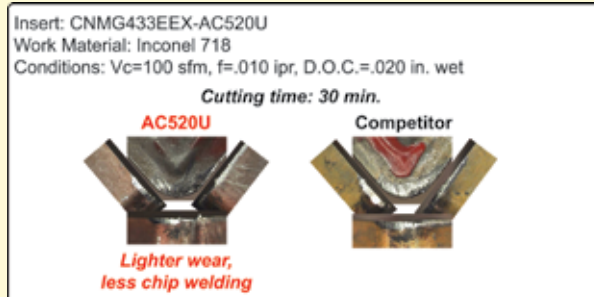
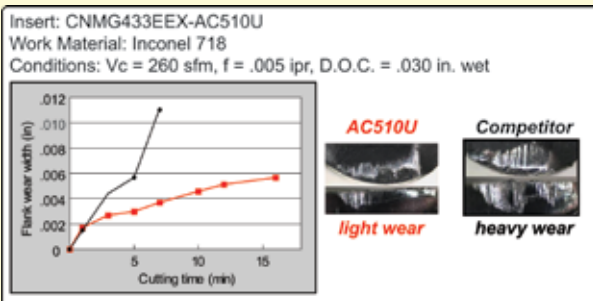
Finishing	Medium	Roughing
<b>AC510U</b>		
	<b>AC520U</b>	

## Coating Structure

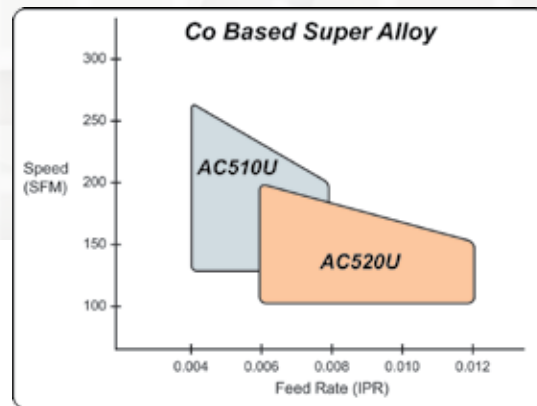
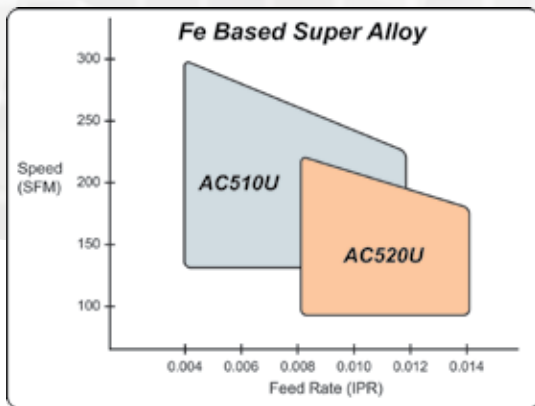
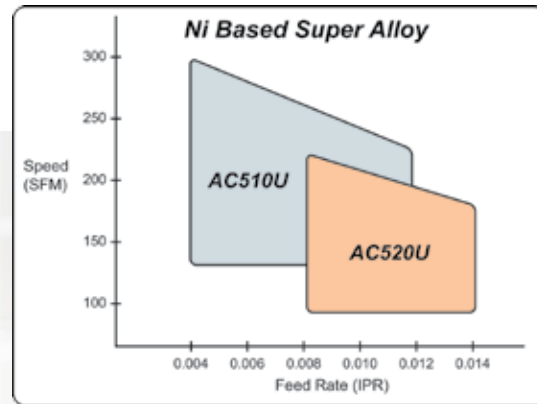
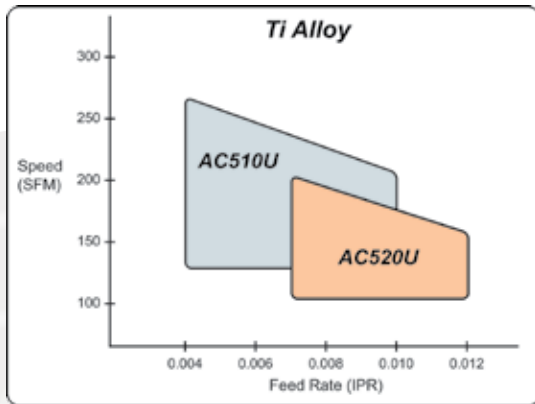


- Increased coating hardness by 40%
- Oxidation temperature increased by 200°C

## Performance

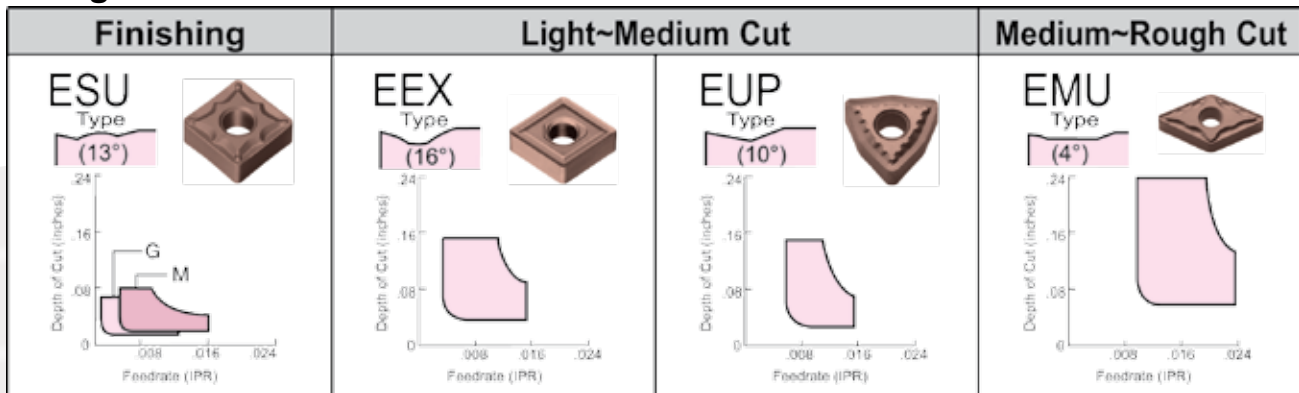


## Recommended Cutting Conditions

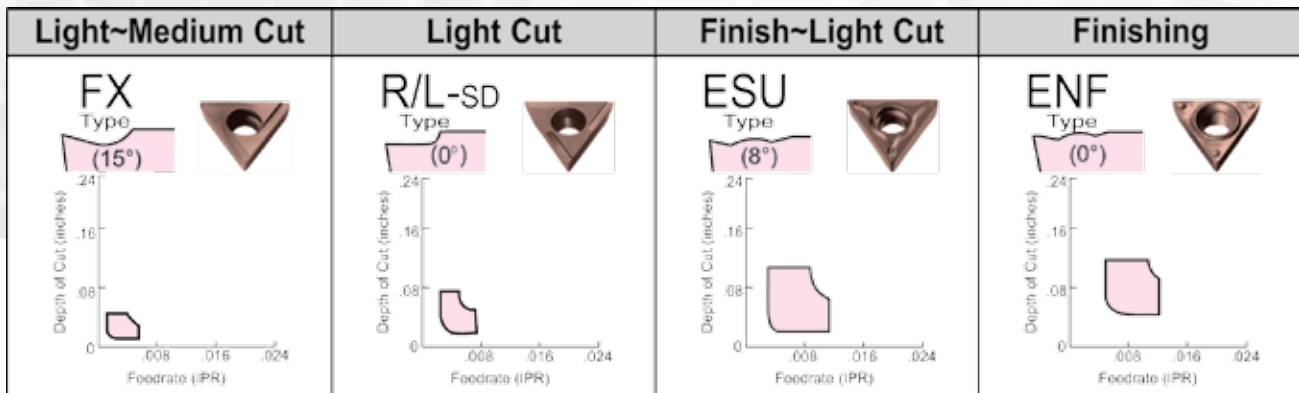


## Chipbreaker Selection

### • Negative



### • Positive



# AC510U/AC520U for turning of exotic materials

## Insert Availability-NEGATIVE

<b>CNGG</b> 80° Diamond/Negative							
Sumitomo Cat. No.	ISO Cat. No.	AC510U	AC520U	I.C.	Thickness	Nose Radius	Hole Dia.
CNGG 430 ESU	CNGG120401N-SU	●	●	.500	.1875	.0039	.2031
CNGG 430.5 ESU	CNGG120402N-SU	●	●	.500	.1875	.0078	.2031
CNGG 431 ESU	CNGG120404N-SU	●	●	.500	.1875	.0156	.2031
CNGG 432 ESU	CNGG120408N-SU	●	●	.500	.1875	.0313	.2031
<b>CNMG</b> 80° Diamond/Negative							
Sumitomo Cat. No.	ISO Cat. No.	AC510U	AC520U	I.C.	Thickness	Nose Radius	Hole Dia.
CNMG 430.5 ESU	CNMG120402N-SU	●	●	.500	.1875	.0078	.2031
CNMG 431 ESU	CNMG120404N-SU	●	●	.500	.1875	.0156	.2031
CNMG 432 ESU	CNMG120408N-SU	●	●	.500	.1875	.0313	.2031
CNMG 433 ESU	CNMG120412N-SU	●	●	.500	.1875	.0464	.2031
CNMG 431 EEX	CNMG120404N-EX	●	●	.500	.1875	.0156	.2031
CNMG 432 EEX	CNMG120408N-EX	●	●	.500	.1875	.0313	.2031
CNMG 433 EEX	CNMG120412N-EX	●	●	.500	.1875	.0464	.2031
CNMG 543 EEX	CNMG160612N-EX	●	●	.625	.250	.0469	.250
CNMG 643 EEX	CNMG190612N-EX	●	●	.750	.250	.0469	.3126
CNMG 431 EUP	CNMG120404N-UP	●	●	.500	.1875	.0156	.2031
CNMG 432 EUP	CNMG120408N-UP	●	●	.500	.1875	.0313	.2031
CNMG 433 EUP	CNMG120412N-UP	●	●	.500	.1875	.0464	.2031
CNMG 432 EMU	CNMG120408N-MU	●	●	.500	.1875	.0313	.2031
CNMG 433 EMU	CNMG120412N-MU	●	●	.500	.1875	.0464	.2031
CNMG 542 EMU	CNMG160608N-MU	●	●	.625	.250	.0313	.250
CNMG 543 EMU	CNMG160612N-MU	●	●	.625	.250	.0469	.250
CNMG 544 EMU	CNMG160616N-MU	●	●	.625	.250	.0625	.250
CNMG 642 EMU	CNMG190608N-MU	●	●	.750	.250	.0313	.3126
CNMG 643 EMU	CNMG190612N-MU	●	●	.750	.250	.0469	.3126
CNMG 644 EMU	CNMG190616N-MU	●	●	.750	.250	.0625	.3126
<b>DNGG</b> 55° Diamond/Negative							
Sumitomo Cat. No.	ISO Cat. No.	AC510U	AC520U	I.C.	Thickness	Nose Radius	Hole Dia.
DNGG 430 ESU	DNGG150401N-SU	●	●	.500	.1875	.0039	.2031
DNGG 430.5 ESU	DNGG150402N-SU	●	●	.500	.1875	.0078	.2031
DNGG 431 ESU	DNGG150404N-SU	●	●	.500	.1875	.0156	.2031
DNGG 432 ESU	DNGG150408N-SU	●	●	.500	.1875	.0313	.2031
<b>DNMG</b> 55° Diamond/Negative							
Sumitomo Cat. No.	ISO Cat. No.	AC510U	AC520U	I.C.	Thickness	Nose Radius	Hole Dia.
DNMG 431 EEX	DNMG150404N-EX	●	●	.500	.1875	.0156	.2031
DNMG 432 EEX	DNMG150408N-EX	●	●	.500	.1875	.0313	.2031
DNMG 433 EEX	DNMG150412N-EX	●	●	.500	.1875	.0469	.2031
DNMG 431 ESU	DNMG150404N-SU	●	●	.500	.1875	.0156	.2031
DNMG 432 ESU	DNMG150408N-SU	●	●	.500	.1875	.0313	.2031
DNMG 433 ESU	DNMG150412N-SU	●	●	.500	.1875	.0469	.2031
DNMG 431 EUP	DNMG150404N-UP	●	●	.500	.1875	.0156	.2031
DNMG 432 EUP	DNMG150408N-UP	●	●	.500	.1875	.0313	.2031
DNMG 433 EUP	DNMG150412N-UP	●	●	.500	.1875	.0469	.2031
DNMG 432 EMU	DNMG150408N-MU	●	●	.500	.1875	.0313	.2031
DNMG 433 EMU	DNMG150412N-MU	●	●	.500	.1875	.0469	.2031

<b>SNMG</b> 90° Square/Negative									
Sumitomo Cat. No.	ISO Cat. No.	AC510U	AC520U	I.C.	Thickness	Nose Radius	Hole Dia.		
SNMG 431 EEX	SNMG120404N-EX	●	●	.500	.1875	.0156	.2031		
SNMG 432 EEX	SNMG120408N-EX	●	●	.500	.1875	.0313	.2031		
SNMG 433 EEX	SNMG120412N-EX	●	●	.500	.1875	.0469	.2031		
SNMG 543 EEX	SNMG150612N-EX	●	●	.625	.250	.0469	.250		
SNMG 643 EEX	SNMG190612N-EX	●	●	.750	.250	.0469	.3126		
SNMG 432 EMU	SNMG120408N-MU	●	●	.500	.1875	.0313	.2031		
SNMG 433 EMU	SNMG120412N-MU	●	●	.500	.1875	.0469	.2031		
SNMG 543 EMU	SNMG150612N-MU	●	●	.625	.250	.0469	.250		
SNMG 544 EMU	SNMG150616N-MU	●	●	.625	.250	.0625	.250		
SNMG 643 EMU	SNMG190612N-MU	●	●	.750	.250	.0469	.3126		
SNMG 644 EMU	SNMG190616N-MU	●	●	.750	.250	.0625	.3126		
SNMG 432 ESU	SNMG120408N-SU	●	●	.500	.1875	.0313	.2031		
<b>TNMG</b> 60° Triangle/Negative									
Sumitomo Cat. No.	ISO Cat. No.	AC510U	AC520U	I.C.	Thickness	Nose Radius	Hole Dia.		
TNMG 331 EEX	TNMG160404N-EX	●	●	.375	.1875	.0156	.150		
TNMG 332 EEX	TNMG160408N-EX	●	●	.375	.1875	.0313	.150		
TNMG 333 EEX	TNMG160412N-EX	●	●	.375	.1875	.0469	.150		
TNMG 332 EMU	TNMG160408N-MU	●	●	.375	.1875	.0313	.150		
TNMG 333 EMU	TNMG160412N-MU	●	●	.375	.1875	.0469	.150		
<b>VNGG</b> 35° Diamond/Negative									
Sumitomo Cat. No.	ISO Cat. No.	AC510U	AC520U	I.C.	Thickness	Nose Radius	Hole Dia.		
VNGG 330 ESU	VNGG160401N-SU	●	●	.375	.1875	.0039	.150		
VNGG 330.5 ESU	VNGG160402N-SU	●	●	.375	.1875	.0078	.150		
VNGG 331 ESU	VNGG160404N-SU	●	●	.375	.1875	.0156	.150		
VNGG 332 ESU	VNGG160408N-SU	●	●	.375	.1875	.0313	.150		
<b>VNMG</b> 35° Diamond/Negative									
Sumitomo Cat. No.	ISO Cat. No.	AC510U	AC520U	I.C.	Thickness	Nose Radius	Hole Dia.		
VNMG 331 ESU	VNMG160404N-SU	●	●	.375	.1875	.0156	.150		
VNMG 332 ESU	VNMG160408N-SU	●	●	.375	.1875	.0313	.150		
VNMG 331 EUP	VNMG160404N-UP	●	●	.375	.1875	.0156	.150		
VNMG 332 EUP	VNMG160408N-UP	●	●	.375	.1875	.0313	.150		
VNMG 332 EEX	VNMG160408N-EX	●	●	.375	.1875	.0313	.150		
<b>WNGG</b> 80° Trigon/Negative									
Sumitomo Cat. No.	ISO Cat. No.	AC510U	AC520U	I.C.	Thickness	Nose Radius	Hole Dia.		
WNGG 431 ESU	WNGG080404N-SU	●	●	.500	.1875	.0156	.2031		
<b>WNMG</b> 80° Trigon/Negative									
Sumitomo Cat. No.	ISO Cat. No.	AC510U	AC520U	I.C.	Thickness	Nose Radius	Hole Dia.		
WNMG 431 EEX	WNMG080404N-EX	●	●	.500	.1875	.0156	.2031		
WNMG 432 EEX	WNMG080408N-EX	●	●	.500	.1875	.0313	.2031		
WNMG 432 EMU	WNMG080408N-MU	●	●	.500	.1875	.0313	.2031		
WNMG 433 EMU	WNMG080412N-MU	●	●	.500	.1875	.0469	.2031		
WNMG 432 EUP	WNMG080408N-UP	●	●	.500	.1875	.0313	.2031		

● = Stocked standard items

# AC510U/AC520U for turning of exotic materials

## Insert Availability-POSITIVE

<b>CCMT</b>		80° Diamond/7° Positive					
Sumitomo Cat. No.	ISO Cat. No.	AC510U	AC520U	I.C.	Thickness	Nose Radius	Hole Dia.
CCMT 21.50.5 ESU	CCMT060202N-SU	●	●	.250	.094	.0078	.0156
CCMT 21.51 ESU	CCMT060204N-SU	●	●	.250	.094	.110	.0156
CCMT 21.52 ESU	CCMT060208N-SU	●	●	.250	.094	.0313	.0156
CCMT 32.50.5 ESU	CCMT09T302N-SU	●	●	.375	.156	.0078	.1732
CCMT 32.51 ESU	CCMT09T304N-SU	●	●	.375	.156	.0156	.1732
CCMT 32.52 ESU	CCMT09T308N-SU	●	●	.375	.156	.0313	.1732
<b>CPGT</b>		80° Diamond/11° Positive					
CPGT 2.51.50.5	CPGT080202N-SD	●	●	.3125	.094	.0078	.134
<b>CPMT</b>		80° Diamond/11° Positive					
CPMT 21.51 ESU	CPMT060204N-SU	●	●	.250	.094	.0156	.110
<b>DCMT</b>		55° Diamond/7° Positive					
DCMT 21.50.5 ESU	DCMT070202N-SU	●	●	.250	.094	.0078	.110
DCMT 21.51 ESU	DCMT070204N-SU	●	●	.250	.094	.0156	.110
DCMT 21.52 ESU	DCMT070208N-SU	●	●	.250	.094	.0313	.110
DCMT 32.50.5 ESU	DCMT11T302N-SU	●	●	.375	.156	.0078	.1732
DCMT 32.51 ESU	DCMT11T304N-SU	●	●	.375	.156	.0156	.1732
DCMT 32.52 ESU	DCMT11T308N-SU	●	●	.375	.156	.0313	.1732
<b>TBGT</b>		60° Triangle/5° Positive					
TBGT 520.5 LFX	TBGT060102L-FX	●	●	.156	.125	.0078	.090
TBGT 521 LFX	TBGT060104L-FX	●	●	.156	.125	.0156	.090
TBGT 521 RFX	TBGT060104R-FX	●	●	.156	.125	.0156	.090
<b>TCMT</b>		55° Triangle/7° Positive					
TCMT 21.51 ESU	TCMT110204N-SU	●	●	.250	.094	.0156	.110
TCMT 21.52 ESU	TCMT110208N-SU	●	●	.250	.094	.0313	.110
TCMT 32.51 ESU	TCMT16T304N-SU	●	●	.375	.156	.0156	.1693
TCMT 32.52 ESU	TCMT16T308N-SU	●	●	.375	.156	.0313	.1693
<b>TPG</b>		60° Triangle/11° Positive					
TPG 321	TPGN160304	●	●	.375	.125	.0156	-
TPG 322	TPGN160308	●	●	.375	.125	.0313	-
TPG 432	TPGN220408	●	●	.500	.1875		-
<b>TPGG</b>		60° Triangle/11° Positive					
TPGG 221 L	TPGT110304L-SD	●	●	.250	.125	.0156	.130
TPGG 221 R	TPGT110304R-SD	●	●	.250	.125	.0156	.130
TPGG 331 L	TPGT160404L-SD	●	●	.375	.1875	.0156	.1693
TPGG 331 R	TPGT160404R-SD	●	●	.375	.1875	.0156	.1693

<b>TPGT</b>		60° Triangle/11° Positive					
Sumitomo Cat. No.	ISO Cat. No.	AC510U	AC520U	I.C.	Thickness	Nose Radius	Hole Dia.
TPGT 630.5 L	TPGT080202L-W	●	●	.1875	.094	.0078	.090
TPGT 630.5 LFX	TPGT080202L-FX	●	●	.1875	.094	.0078	.090
TPGT 630.5 RFX	TPGT080202R-FX	●	●	.1875	.094	.0078	.090
TPGT 631 LFX	TPGT080204L-FX	●	●	.1875	.094	.0156	.090
TPGT 631 RFX	TPGT080204R-FX	●	●	.1875	.094	.0156	.090
TPGT 21.50.5 LFX	TPGT110202L-FX	●	●	.250	.094	.0078	.110
TPGT 21.50.5 RFX	TPGT110202R-FX	●	●	.250	.094	.0078	.110
TPGT 21.51 LFX	TPGT110204L-FX	●	●	.250	.094	.0156	.110
TPGT 21.51 RFX	TPGT110204R-FX	●	●	.250	.094	.0156	.110
TPGT 21.52 LFX	TPGT110208L-FX	●	●	.250	.094	.0313	.110
<b>TPMT</b>		60° Triangle/11° Positive					
TPMT 21.50.5 ESU	TPMT110202N-SU	●	●	.250	.094	.0078	.107
TPMT 21.51 ESU	TPMT110204N-SU	●	●	.250	.094	.0156	.107
TPMT 221 ENF	TPMT110304N-SF	●	●	.250	.125	.0156	.130
TPMT 222 ENF	TPMT110308N-SF	●	●	.250	.125	.0313	.130
TPMT 331 ENF	TPMT160404N-SF	●	●	.375	.1875	.0156	.1693
TPMT 332 ENF	TPMT160408N-SF	●	●	.375	.1875	.0313	.1693
<b>VBMT</b>		35° Diamond/5° Positive					
VBMT 221 ESU	VBMT110304N-SU	●	●	.250	.125	.0156	.134
VBMT 222 ESU	VBMT110308N-SU	●	●	.250	.125	.0313	.134
VBMT 331 ESU	VBMT160404N-SU	●	●	.375	.1875	.0156	.1752
VBMT 332 ESU	VBMT160408N-SU	●	●	.375	.1875	.0313	.1732
<b>VCMT</b>		35° Diamond/7° Positive					
VCMT 331 ESU	VCMT160404N-SU	●	●	.375	.1875	.0156	.1732
VCMT 332 ESU	VCMT160408N-SU	●	●	.375	.1875	.0313	.1732



# SUMITOMO

CARBIDE - CBN - DIAMOND

*'at the cutting edge'*

## Sumitomo Electric Carbide, Inc.

### Headquarters

1001 Business Center Drive  
Mount Prospect, IL 60056-6080  
P.O. Box 545, Mt. Prospect, IL 60056-0545  
Phone: (800) 950-5202  
Phone: (847) 635-0044  
Fax: (847) 635-7866  
<http://www.sumicarbide.com>

### Detroit Branch

14496 Sheldon Road #230  
Plymouth, MI 48170  
Phone: (800) 239-5177  
Phone: (734) 451-0200  
Fax: (734) 451-5338

### Cincinnati Branch

4450 Carver Woods Drive  
Cincinnati, OH 45242-5545  
Phone: (800) 879-1887  
Phone: (513) 891-4000  
Fax: (513) 794-2911

### Huntsville Branch

5650 Sanderson Street NW Suite J  
Huntsville, AL 35805  
Phone: (256) 895-2845  
Fax: (256) 895-3150

### Torrance Branch

21221 South Western Avenue Suite 200  
Torrance, CA 90501  
Phone: (800) 950-5202  
Fax: (310) 782-0211

