Notice

Thank you for using the Sumitomo Electric Cutting Tool General Catalogue (Sumitomo/SUMIBORON/SUMIDIA Cutting Tools Catalogue).

■ This catalogue presents the major items in the Sumitomo Cutting Tools product line. The catalogue is organised as follows:

(1) Cutting Tool Grades
(2) Igetalloy (Carbide) Products
(3) SUMIBORON, SUMIDIA Products

● Ask for our other brochures and pamphlets, including the SUMIBORON/SUMIDIA Catalogue and our Technical Guidance pamphlets.

■ This catalogue is current as of October 2014.

■ As a result of our ongoing research, product may reflect enhancements in quality, performance, and specifications not listed in this catalogue.

■ To order Sumitomo/SUMIBORON/SUMIDIA products, contact your nearest Sumitomo Electric Hardmetal dealer or distributor. For inquiries or other requests, feel free to contact your nearest sales office.

Stock Markings

■ Stock-marking Chart

●● mark: Standard stocked item
● mark: To be replaced by a new item featured on the same page.
▲ mark: To be replaced by new item (Please confirm stock availability)

＊ mark: Semi-standard stock (Please confirm stock availability)
○○ mark: Stock or planned stock (Please confirm stock availability)
Blank: Made-to-order item
- mark: We cannot produce

Meaning of Icons

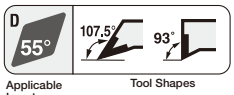
Common

New : Featured for the first time in this catalogue.
Expansion : Item newly added to expand our selection of stock items.

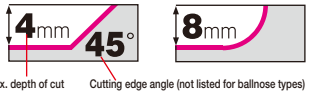
Grade

ISO classification of work material:

Tool (Ex.)



Milling Cutter (Ex.)

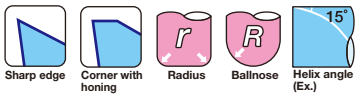


Drill (Ex.)

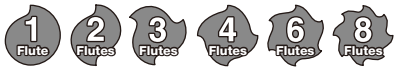
Endmill

Coating (Ex.):

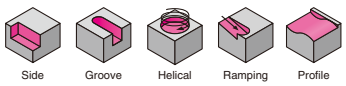
Shape:



No. of teeth:



Application (Ex.):



Safety Notes

■ Please refer to pages 24-25 for precautionary notes on cutting tool usage.

Precautionary Notes on Carbide Tool Usage/Cutting Tools

■ PRECAUTIONARY NOTES ON THE USE OF CUTTING TOOLS

Product Line	Dangers	Countermeasure
General Cutting Tools	◎ As the tools have sharp cutting edges, you may cut your hands if they are in direct contact with the edges.	* Please use gloves and other protective measures, especially when removing a product from its case or mounting it onto a machine.
	◎ Incorrect method of use or inappropriate application conditions could result in injuries caused by tool breakage or projectiles.	* Please use safety cover, safety glasses and other protective measures. * Please operate within recommended conditions. Please refer to the instruction manuals or catalogues.
	◎ If there is a sharp increase in cutting resistance due to high impact loads or excessive wear, injuries may result from tool breakage or projectiles.	* Please use safety cover, safety glasses and other protective measures. * Replace the tools before indicated product lifetimes expire.
	◎ High temperature chips or lengthy chips being discharged may cause injuries or burns.	* Please use safety cover, safety glasses and other protective measures. * When clearing chips, please wear safety gloves and use an appropriate tool.
	◎ Both tooling and work material will be heated up during machining. Burns may occur if they are touched with bare hands immediately after machining operations.	* Please use safety cover, safety glasses and take any other necessary precautions.
	◎ Chips may ignite or catch fire from sparks during machining or from heat produced from breakage.	* Please do no use this product in places where there are highly flammable or highly explosive materials. * If non-water soluble coolant is used, precautions against fire must be take beforehand.
	◎ At high rotational speeds, injuries may result from tool breakage if the cutter is not balanced or if there is runout vibrations.	* Please use safety cover, safety glasses and other protective measures. * Please perform a dry run to ensure that there are no vibrations or any abnormal noises.
	◎ Burrs formed on workpieces are sharp and may cause injuries.	* Please do not handle machined parts with bare hands.
General Indexable Tools	◎ If inserts or holder parts are not clamped properly, they may drop off or fly out during machining.	* Remove any foreign particles, and clean all contact and clamping parts before mounting the inserts. * Check that inserts and parts have been properly clamped. Use spanners provided for securing. Do not use inserts or parts not specified by the manufacturer.
	◎ Using pipes to aid tightening may cause insert or tool breakage as a result from over tightening.	* Do not use any tightening aids other than the spanners provided.
	◎ It is dangerous when tools are used at high speeds, as inserts may fly out due to centrifugal forces.	* Please operate within recommended conditions. Please refer to the instruction manuals or catalogues.
Rotating Cutters	◎ As the cutters have sharp cutting edges, you may cut your hands if they are in direct contact with the edges.	* Please use gloves and other protective measures, especially when removing products from their cases.
	◎ Injuries may result from tool breakage or projectiles if there is no rotational balance of the cutter, which causes wobbling or vibrations.	* Rotational speeds should be kept within recommended conditions. * Regular maintenance should be performed to maintain the rotational balance and accuracy of the machine's spindle bearings. Worn out bearings will lead to rotational imbalance and run-out.
Drills	◎ When using rotary tools to perform drilling, chips may be flung out at high speeds. The pushed-out disc will also have sharp edges.	* Please use safety cover, safety glasses and other protective measures. A cover must also be put around the chuck.
	◎ Drills with very small diameters have sharp tips and will prick the fingers. Surgery will be required if the drills break inside the finger. Drills may also scatter shards when fractured.	* Take extra caution when handling very small drills. Please use gloves and any other necessary precautions, especially when removing products from their cases or when mounting them onto machines.
Brazed Tools	◎ Injuries may result from a dislodged insert or from tool breakage.	* Please ensure that tools have been properly brazed before use. * Please do not use products under high temperature conditions.
Others	◎ Inserts that have been repeatedly brazed run a risk of breaking easily while in use.	* Please do not use inserts that have been brazed repeatedly as their strength will be lowered.
	◎ There is a danger of breakages and even injuries if machines and tools are used for purposes other than their intended uses.	* Please follow the regulations specified for intended use.

Conclusion

The content of this pamphlet covers only basic instructions for precautionary measure to take. For more details, please refer to the specific instruction manual and catalogue of the respective tools or please contact us directly.
Sumitomo Electric Hardmetal Corp. will not be liable for any injuries sustained from any unauthorised modifications made to the original tool specifications.

The Japan Cemented Carbide Tool Manufacturers' Association's Approval System For Environmentally Conscious Products

In addition to reducing the environmental load of our own manufacturing process, Sumitomo Electric (Sumitomo Electric Hardmetal) strives to reduce the environmental load during customer use by making products with longer tool life and higher machining efficiency.

●Approval System for Environmentally Conscious Products

This system, launched in April of 2007, targets products in their first year on the market that do not contain substances designated by RoHS.
JCTMA evaluates the environmental load of these products and approves the use of certified environmental labels.

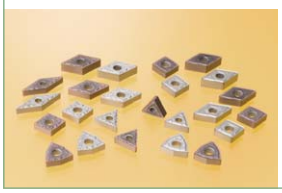
Products are evaluated for their environmental load during the manufacturing process, and during their life cycle with the end-user. The evaluation receives a score which determines whether the product receives ☆(40 to 59 points), ☆☆(60 to 79 points), or ☆☆☆(80 points or higher) recognition.

●Environmental Label (Sample)

●Sumitomo Electric (Sumitomo Electric Hardmetal's) Environmentally Conscious Products (As of August, 2014)

2014

Chipbreaker for Exotic Alloy Turning EG/EF Series



A chipbreaker series for exotic alloys and stainless steel, applications in which chip control is difficult. The EG Type is for roughing and general-purpose use and has spherical projections on its rake face to maintain chip control performance and thereby achieve excellent wear resistance and chip control. The EF Type is for finishing and has a rake angle focused on cutting performance (20°) to reduce wear and chip curl diameters and improve chip breaking performance.

(Approval Number 2014-017 ☆☆☆)

SEC-Wave Radius Mill RSX Series

A radius cutter for exotic alloy and stainless steel. Achieves low-resistance, low-vibration machining thanks to its ultra-high rake insert arrangement and high rigidity body.

(Approval Number 2014-018 ☆☆☆)

Drills for High Efficiency Machining Strong MultiDrill HX Series

Enables high-efficiency drilling of cast iron at speeds of over v_f=1,000mm/min by applying RX THINNING, which drastically reduces cutting resistance, and a special double margin design to the cutting edge.

(Approval Number 2014-019 ☆☆☆)

2013

Cermet Grade For Steel Cutting T1500Z

A coated cermet employing our newly developed "Brilliant Coat."
Maintains high-quality glossy surface finishes and achieves outstanding wear resistance.

(Approval Number 2013-001 ☆☆)

High-class Cermet Grade For Turning T1000A

An uncoated cermet with a composite hard phase, which improves toughness and adhesion resistance.
Ideal for continuous finishing of steel, cast iron, and sintered alloys at high speeds of v_c=300m or higher.

(Approval Number 2013-002 ☆☆)

2012

Coated Grades for High-speed Continuous Cutting of Cast Iron AC405K

A grade with superior resistance to wear and plastic deformation that is suited to high-speed to continuous cutting thanks to Super FF Coat and special surface treatment technology.

(Approval Number 2012-003 ☆☆☆)

Coated Grades for General Machining of Cast Iron AC415K

The first recommended grade for cast iron cutting that provides stable and long tool life in a wide range of processes thanks to Super FF Coat and special surface treatment technology.

(Approval Number 2012-004 ☆☆☆)

Shoulder Milling SEC-Wave Mill WFX Series

Unique insert cutting edge and high-precision body provide superior cutting performance, beautiful machined surface finish, and excellent shoulder milling squareness.

(Approval Number 2012-005 ☆☆☆)

2011

Approval Number	Approval Ranking	Series	
2011-003	☆☆	CBN Grades for Machining of Hardened Steel	BN1000
2011-004	☆☆	CBN Grades for Ductile Cast Iron Machining	BNC500
2011-005	☆☆☆	High Efficiency Face Milling Cutters for Cast Iron and Cast Steel	SEC-DNX/DNH(S)
2011-019	☆☆	CBN Grades for Cast Iron/Sintered Alloy Machining	BN7000
2011-023	☆☆☆	Coated Grades for Interrupted Cutting of Cast Iron/Mill-Scaled Work	AC420K

2010

Approval Number	Approval Ranking	Series	
2010-012	☆☆	CBN Grades for Machining of Hardened Steel	BN2000
2010-015	☆☆☆	Steel Turning Grades	AC810P
2010-023	☆☆	Steel Turning Grades	T1500A

For details on approved products, see "Environmental Initiatives" on the SEH website. → http://www.sumitool.com/