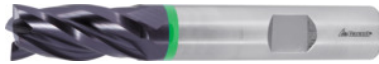


**Garant**
**End mill HSS-E-SPM HPC, TiAlN, Ø DC: 4,5mm**

**Order data**

Order number	191635 4,5
GTIN	4045197547101
Item class	11W

**Description**
**Version:**

Special **SPM** substrate with very high cobalt content.

Combines the **hardness of solid carbide** and the **toughness of PM steel**.

Multi-flute end mill with universal geometry.

Can be used as a finishing end mill, semi-roughing or roughing end mill.

**Technical description**

Cutting edge Ø D <sub>c</sub>	4.5 mm
No. of teeth Z	4
Feed f <sub>z</sub> for side milling in steel < 1100 N/mm <sup>2</sup>	0.012 mm
Shank Ø D <sub>s</sub>	6 mm
Overall length L	55 mm
Flute length L <sub>c</sub>	11 mm
Direction of infeed	horizontal, oblique and vertical
Shank	DIN 1835 B to h6
Tolerance nominal Ø	k12
Helix angle	30 degrees
Corner chamfer angle	90 degrees
Coating	TiAlN
Tool material	HSS E SPM

Standard	DIN 844 B
Type	N
Helix angle characteristic	unequal spacing
Cutting width $a_e$ for milling operation	$0.5 \times D$ for side milling
Through-coolant	no
Machining strategy	HPC
Colour ring	green
Type of product	End / face mill

### User data

	Suitability	$V_c$	ISO code
Aluminium (short chipping)	suitable only under restricted conditions	159 m/min	N
Alu > 10% Si	suitable only under restricted conditions	125 m/min	N
Steel < 500 N/mm <sup>2</sup>	suitable	95 m/min	P
Steel < 750 N/mm <sup>2</sup>	suitable	74 m/min	P
Steel < 900 N/mm <sup>2</sup>	suitable	74 m/min	P
Steel < 1100 N/mm <sup>2</sup>	suitable	42 m/min	P
Steel < 1400 N/mm <sup>2</sup>	suitable	32 m/min	P
INOX < 900 N/mm <sup>2</sup>	suitable	26 m/min	M
INOX > 900 N/mm <sup>2</sup>	suitable	21 m/min	M
GG(G)	suitable only under restricted conditions	63 m/min	K
CuZn	suitable only under restricted conditions	125 m/min	N
Uni	suitable		
wet maximum	suitable		
dry	suitable		
Air	suitable		

