WIDIA

VariMill™ Chip Splitters

DYNAMIC MILLING | RAMPING |
HELICAL INTERPOLATION | SIDE MILLING

2021 INCH

HANITA™

DYNAMIC | EFFICIENT | STEADY

SHEAR CHIPS USING THE VARIMILL CHIP SPLITTER END MILLS, INCREASING PRODUCTIVITY BY EVACUATING CHIPS IN DEEP CAVITIES (AP1 MAX UP TO 4.5 X D) WHILE USING DYNAMIC MILLING STRATEGIES IN STEEL, STAINLESS STEEL AND SUPER ALLOYS APPLICATIONS.

HANITA™

DYNAMIC CHIP FLOW

WIDIA

VariMill™ Chip Splitter

High-Performance Solid End Milling

Materials

P M S

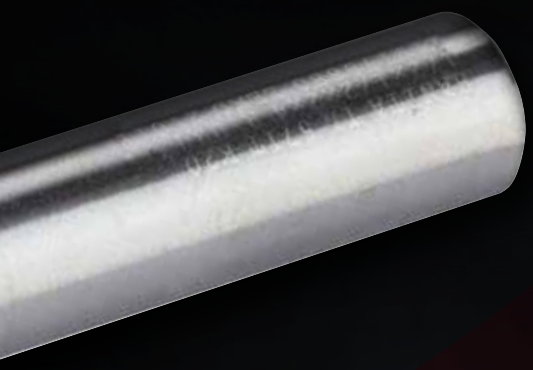
Applications

- Trochoidal Milling
- Helical Interpolation
- Side Milling/ Shoulder Milling
- Ramping
- Flute Configuration: 5
- Flute Configuration: 7

WP15PE AND WS15PE GRADES

5- and 7-flute solid carbide end mill.

Diameter range: 1/2"- 1"



Built-in features to enable chip evacuation when machining small pockets at 4.5 x D maximum depth of cut

Chip Splitters
to break chips apart into small segments for easier evacuation

HANITA™

SOLID END MILLING

VARIMILL™ CHIP SPLITTER

WIDIA

Solid Carbide End Mills

CHIP SPLITTER • CATALOG NUMBERING SYSTEM

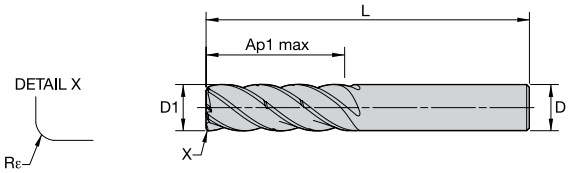
Each character in our catalog number signifies a specific trait of that product.
Use the following key columns and corresponding images to easily identify which attributes apply.

570TM12006RJT

57	0	T	M	120	0	6	R	J	T
Platform	Neck and Cutting Length	Shape/ Application	UOM	Cutting Diameter	Overall Length	Shank Size	Corner Style	Corner Size	Shank Style
57 = VariMill 5 Flute 77 = VariMill 7 Flute	0 = No Neck and Regular Cutting Length (approx 2 x D) 1 = No Neck – Long Cutting Length (approx 3 x D) 2 = No Neck – Longer Cutting Length (approx 5 x D) 3 = No Neck – Extended Cutting Length (approx 7 x D)	T = Specific for Trochoidal and Dynamic Milling	M = Metric E = Inch	010 = 1.00mm 015 = 1.50mm 020 = 2.00mm 025 = 2.50mm 030 = 3.00mm (1/8") 035 = 3.50mm 040 = 4.00mm 045 = 4.50mm 050 = 5.00mm (3/16") 060 = 6.00mm 070 = 7.00mm (1/4") 080 = 8.00mm (5/16") 090 = 9.00mm 100 = 10.00mm (3/8") 110 = 7/16" 120 = 12mm 130 = 1/2" 160 = 16.00mm (5/8") 180 = 18.00mm 190 = 3/4" 200 = 20.00mm 250 = 25.00mm (1")	0 = Regular 1 = Extended 2 = Long 3 = Extra Long 4 = Stub	0 = 3.00mm (1/8") 1 = 4.00mm (3/16") 2 = 5.00mm 3 = 6.00mm (1/4") 4 = 8.00mm (5/16") 5 = 10.00mm (3/8") 6 = 12.00mm (1/2") 7 = 14.00mm 8 = 16.00mm (5/8") 9 = 20.00mm (3/4") A = 25.00mm (1")	S = Sharp R = Radius C = Chamfer G = Chamfer End Mill F = Concave Radius	Z = Sharp A = 0.20mm (.015") Y = 0.25mm (.017") E = 0.50mm (.030") G = 0.75mm (.060") J = 1.00mm (.090") H = 1.50mm (.010") K = 2.00mm (.120") M = 2.50mm (.160") P = 3.00mm (.190") Q = 4.00mm (.250") R = 5.00mm (.375") D = 6.00mm (.450") X = Special	T = Cylindrical

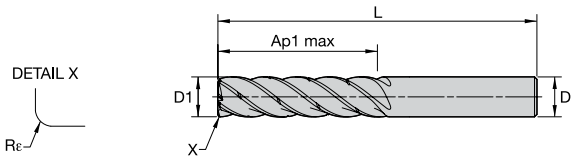
HANITA

SERIES 570T • RADIUSED • 5 FLUTES • CYLINDRICAL SHANK • INCH



order #	catalog #	D1	D	length of cut Ap1 max	length L	Rε	ZU
grade WP15PE AlTiN							
6853744	570TE13006RET	1/2	1/2	1 1/2	3 1/2	.030	5
6853747	570TE19009RET	3/4	3/4	2 1/4	5	.030	5
6853750	570TE2500ARET	1	1	2 1/4	5	.030	5

SERIES 571T • RADIUSED • 5 FLUTES • CYLINDRICAL SHANK • INCH



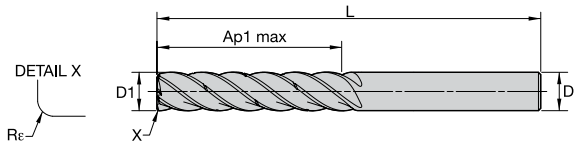
order #	catalog #	D1	D	length of cut Ap1 max	length L	Rε	ZU
grade WP15PE AlTiN							
6853745	571TE13016RET	1/2	1/2	2	4	.030	5
6853748	571TE19019RET	3/4	3/4	3	6	.030	5
6853761	571TE2501ARET	1	1	3 1/2	6 1/2	.030	5

VARIMILL™ CHIP SPLITTER

Solid Carbide End Mills

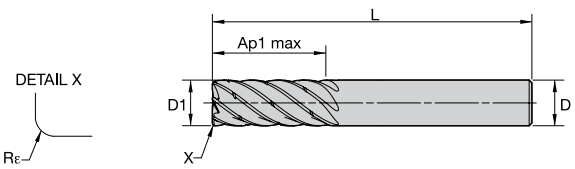
WIDIA

SERIES 572T • RADIUSED • 5 FLUTES • CYLINDRICAL SHANK • INCH



grade WP15PE AlTiN				length of cut	length		
order #	catalog #	D1	D	Ap1 max	L	Rε	ZU
6853746	572TE13026RET	1/2	1/2	2 1/2	5	.030	5
6853749	572TE19029RET	3/4	3/4	4	7	.030	5
6853762	572TE2502ARET	1	1	4 1/2	7 1/2	.030	5

SERIES 770T • RADIUSED • 7 FLUTES • CYLINDRICAL SHANK • INCH



grade WS15PE AlTiN				length of cut	length		
order #	catalog #	D1	D	Ap1 max	L	Rε	ZU
6853763	770TE13006RET	1/2	1/2	1 1/4	3 1/2	.030	7
6853764	770TE13006RGT	1/2	1/2	1 1/4	3 1/2	.060	7
6853795	770TE2500ARET	1	1	1 3/4	4 1/2	.030	7
6853796	770TE2500ARGT	1	1	1 3/4	4 1/2	.060	7
6853797	770TE2500ARKT	1	1	1 3/4	4 1/2	.120	7

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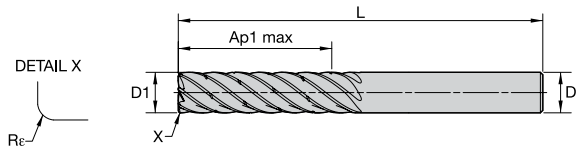
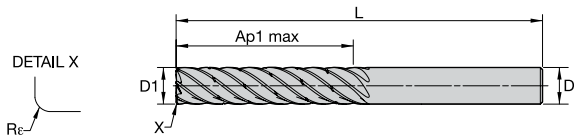
SERIES 771T • RADIUSED • 7 FLUTES • CYLINDRICAL SHANK • INCH



grade WS15PE AlTiN order #	catalog #	D1	D	length of cut Ap1 max	length L	Rε	ZU
6853765	771TE13016RET	1/2	1/2	2 1/8	4 1/2	.030	7
6853766	771TE13016RGT	1/2	1/2	2 1/8	4 1/2	.060	7
6853769	771TE19019RET	3/4	3/4	2 1/4	5	.030	7
6853770	771TE19019RGT	3/4	3/4	2 1/4	5	.060	7
6853791	771TE19019RKT	3/4	3/4	2 1/4	5	.120	7
6853798	771TE2501ARET	1	1	2 1/4	5	.030	7
6853799	771TE2501ARGT	1	1	2 1/4	5	.060	7
6853800	771TE2501ARKT	1	1	2 1/4	5	.120	7

SERIES 772T • RADIUSED • 7 FLUTES • CYLINDRICAL SHANK • INCH

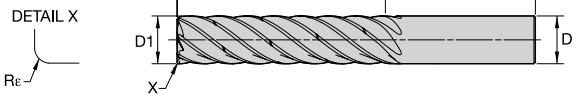


grade WS15PE AlTiN order #	catalog #	D1	D	length of cut Ap1 max	length L	Rε	ZU
6853767	772TE13026RET	1/2	1/2	2 1/2	5	.030	7
6853768	772TE13026RGT	1/2	1/2	2 1/2	5	.060	7
6853792	772TE19029RET	3/4	3/4	3 3/4	7	.030	7
6853793	772TE19029RGT	3/4	3/4	3 3/4	7	.060	7
6853794	772TE19029RKT	3/4	3/4	3 3/4	7	.120	7
6853801	772TE2502ARET	1	1	3 1/2	6 1/2	.030	7
6853802	772TE2502ARGT	1	1	3 1/2	6 1/2	.060	7
6853803	772TE2502ARKT	1	1	3 1/2	6 1/2	.120	7

VARIMILL™ CHIP SPLITTER

Solid Carbide End Mills

SERIES 773T • RADIUSED • 7 FLUTES • CYLINDRICAL SHANK • INCH



grade WS15PE AlTiN order #	catalog #	D1	D	length of cut Ap1 max	length L	Rε	ZU
6853804	773TE2503ARET	1	1	4 1/2	7 1/2	.030	7
6853805	773TE2503ARGT	1	1	4 1/2	7 1/2	.060	7
6853806	773TE2503ARKT	1	1	4 1/2	7 1/2	.120	7

CHIP SPLITTER • 5 FLUTE • APPLICATION DATA • INCH

Material Group		Side Milling		WP15PE Cutting Speed — Vc SFM			Recommended feed per tooth (fz=IPT) for side milling at ae = 10% of D1 — D1 — Diameter					
		ap	ae	min	Start	max	fraction	3/8	1/2	5/8	3/4	1
P	0	Ap max	0.1 x D1	880	1030	1180	IPT	.0034	.0039	.0048	.0054	.0059
	1	Ap max	0.1 x D1	880	1030	1180	IPT	.0034	.0039	.0048	.0054	.0059
	2	Ap max	0.1 x D1	830	990	1125	IPT	.0034	.0039	.0048	.0054	.0059
	3	Ap max	0.1 x D1	710	830	954	IPT	.0024	.0033	.0041	.0048	.0054
	4	Ap max	0.1 x D1	530	705	880	IPT	.0026	.0030	.0036	.0042	.0046
	5	Ap max	0.1 x D1	350	470	590	IPT	.0023	.0026	.0033	.0038	.0043
	6	Ap max	0.1 x D1	295	370	440	IPT	.0019	.0022	.0027	.0031	.0033
M	1	Ap max	0.1 x D1	530	600	675	IPT	.0029	.0033	.0041	.0048	.0054
	2	Ap max	0.1 x D1	350	405	465	IPT	.0023	.0026	.0033	.0038	.0043
	3	Ap max	0.1 x D1	350	380	410	IPT	.0019	.0022	.0027	.0031	.0033
K	1	Ap max	0.1 x D1	710	795	880	IPT	.0034	.0039	.0048	.0054	.0059
	2	Ap max	0.1 x D1	650	740	820	IPT	.0029	.0033	.0041	.0048	.0054
	3	Ap max	0.1 x D1	650	705	765	IPT	.0023	.0026	.0033	.0038	.0043
S	1	Ap max	0.1 x D1	295	410	530	IPT	.0029	.0033	.0041	.0048	.0054
	2	Ap max	0.1 x D1	145	190	235	IPT	.0015	.0018	.0022	.0026	.0029
	3	Ap max	0.1 x D1	350	405	460	IPT	.0015	.0018	.0022	.0026	.0029
	4	Ap max	0.1 x D1	295	320	350	IPT	.0021	.0024	.0030	.0035	.0039
H	1	Ap max	0.1 x D1	470	640	820	IPT	.0026	.0030	.0036	.0042	.0046
	2	Ap max	0.1 x D1	415	560	710	IPT	.0019	.0022	.0027	.0031	.0033

Material Group		Side Milling		WP15PE Cutting Speed — Vc SFM			Recommended feed per tooth (fz=IPT) for side milling at ae = 5% of D1 — D1 — Diameter					
		ap	ae	min	Start	max	fraction	3/8	1/2	5/8	3/4	1
P	0	Ap max	0.05 x D1	980	1145	1310	IPT	.0050	.0050	.0060	.0070	.0080
	1	Ap max	0.05 x D1	980	1145	1310	IPT	.0050	.0050	.0060	.0070	.0080
	2	Ap max	0.05 x D1	920	1100	1250	IPT	.0050	.0050	.0060	.0070	.0080
	3	Ap max	0.05 x D1	790	920	1050	IPT	.0040	.0040	.0060	.0060	.0070
	4	Ap max	0.05 x D1	590	785	980	IPT	.0030	.0040	.0050	.0060	.0060
	5	Ap max	0.05 x D1	390	525	660	IPT	.0030	.0040	.0040	.0050	.0060
	6	Ap max	0.05 x D1	330	410	490	IPT	.0030	.0030	.0040	.0040	.0050
M	1	Ap max	0.05 x D1	590	670	750	IPT	.0040	.0040	.0060	.0060	.0070
	2	Ap max	0.05 x D1	390	455	520	IPT	.0030	.0040	.0040	.0050	.0060
	3	Ap max	0.05 x D1	390	425	460	IPT	.0030	.0030	.0040	.0040	.0050
K	1	Ap max	0.05 x D1	790	885	980	IPT	.0050	.0050	.0060	.0070	.0080
	2	Ap max	0.05 x D1	720	820	920	IPT	.0040	.0040	.0060	.0060	.0070
	3	Ap max	0.05 x D1	720	785	850	IPT	.0030	.0040	.0040	.0050	.0060
S	1	Ap max	0.05 x D1	330	460	590	IPT	.0040	.0040	.0060	.0060	.0070
	2	Ap max	0.05 x D1	160	210	260	IPT	.0020	.0020	.0030	.0030	.0040
	3	Ap max	0.05 x D1	390	455	520	IPT	.0020	.0020	.0030	.0030	.0040
	4	Ap max	0.05 x D1	330	360	390	IPT	.0030	.0030	.0040	.0050	.0050
H	1	Ap max	0.05 x D1	520	720	920	IPT	.0030	.0040	.0050	.0040	.0060
	2	Ap max	0.05 x D1	460	625	790	IPT	.0030	.0030	.0040	.0040	.0050

CHIP SPLITTER • 5 FLUTE • APPLICATION DATA • INCH

Material Group												
		Side Milling					Recommended feed per tooth (fz=IPT) for side milling at ae = 2% of D1					
				WP15PE			D1 — Diameter					
				Cutting Speed — Vc SFM								
		ap	ae	min	Start	max	fraction	3/8	1/2	5/8	3/4	1
P	0	Ap max	0.02 x D1	1000	1170	1330	IPT	.0070	.0080	.0090	.0011	.0110
	1	Ap max	0.02 x D1	1000	1170	1330	IPT	.0070	.0080	.0090	.0011	.0110
	2	Ap max	0.02 x D1	340	1120	1275	IPT	.0070	.0080	.0090	.0011	.0110
	3	Ap max	0.02 x D1	805	940	1070	IPT	.0060	.0060	.0080	.0090	.0100
	4	Ap max	0.02 x D1	600	800	1000	IPT	.0050	.0060	.0070	.0080	.0090
	5	Ap max	0.02 x D1	400	535	670	IPT	.0040	.0050	.0060	.0070	.0080
	6	Ap max	0.02 x D1	335	420	500	IPT	.0040	.0040	.0050	.0060	.0070
M	1	Ap max	0.02 x D1	600	680	765	IPT	.0060	.0060	.0080	.0090	.0100
	2	Ap max	0.02 x D1	400	460	530	IPT	.0040	.0050	.0060	.0070	.0080
	3	Ap max	0.02 x D1	400	430	470	IPT	.0040	.0040	.0050	.0060	.0070
K	1	Ap max	0.02 x D1	805	900	1000	IPT	.0070	.0080	.0090	.0110	.0110
	2	Ap max	0.02 x D1	735	830	940	IPT	.0060	.0060	.0080	.0090	.0100
	3	Ap max	0.02 x D1	735	800	860	IPT	.0040	.0050	.0060	.0070	.0080
S	1	Ap max	0.02 x D1	330	470	600	IPT	.0060	.0060	.0080	.0090	.0100
	2	Ap max	0.02 x D1	165	215	265	IPT	.0030	.0030	.0040	.0050	.0060
	3	Ap max	0.02 x D1	400	460	530	IPT	.0030	.0030	.0040	.0050	.0060
	4	Ap max	0.02 x D1	330	360	390	IPT	.0040	.0050	.0060	.0070	.0080
H	1	Ap max	0.02 x D1	530	730	930	IPT	.0050	.0060	.0070	.0080	.0090
	2	Ap max	0.02 x D1	470	630	800	IPT	.0040	.0040	.0050	.0060	.0070

CHIP SPLITTER • 7 FLUTE • APPLICATION DATA • INCH

Material Group		Side Milling		WS15PE Cutting Speed — Vc SFM			Recommended feed per tooth (fz=IPT) for side milling at ae = 10% of D1 D1 — Diameter					
		ap	ae	min	Start	max	fraction	3/8	1/2	5/8	3/4	1
P	4	Ap max	0.1 x D1	530	705	880	IPT	.0026	.0030	.0036	.0042	.0046
	5	Ap max	0.1 x D1	350	470	590	IPT	.0023	.0026	.0033	.0038	.0043
	6	Ap max	0.1 x D1	295	370	440	IPT	.0019	.0022	.0027	.0031	.0033
M	1	Ap max	0.1 x D1	530	600	675	IPT	.0029	.0033	.0041	.0048	.0054
	2	Ap max	0.1 x D1	350	405	465	IPT	.0023	.0026	.0033	.0038	.0043
	3	Ap max	0.1 x D1	350	380	410	IPT	.0019	.0022	.0027	.0031	.0033
S	1	Ap max	0.1 x D1	295	410	530	IPT	.0029	.0033	.0041	.0048	.0054
	2	Ap max	0.1 x D1	145	190	235	IPT	.0015	.0018	.0022	.0026	.0029
	3	Ap max	0.1 x D1	350	405	460	IPT	.0015	.0018	.0022	.0026	.0029
	4	Ap max	0.1 x D1	295	320	350	IPT	.0021	.0024	.0030	.0035	.0039
H	1	Ap max	0.1 x D1	470	640	820	IPT	.0026	.0030	.0036	.0042	.0046
	2	Ap max	0.1 x D1	415	560	710	IPT	.0019	.0022	.0027	.0031	.0033

Material Group		Side Milling		WS15PE Cutting Speed — Vc SFM			Recommended feed per tooth (fz=IPT) for side milling at ae = 5% of D1 D1 — Diameter					
		ap	ae	min	Start	max	fraction	3/8	1/2	5/8	3/4	1
P	4	Ap max	0.05 x D1	590	785	980	IPT	.0030	.0040	.0050	.0060	.0060
	5	Ap max	0.05 x D1	390	525	660	IPT	.0030	.0040	.0040	.0050	.0060
	6	Ap max	0.05 x D1	330	410	490	IPT	.0030	.0030	.0040	.0040	.0050
M	1	Ap max	0.05 x D1	590	670	750	IPT	.0040	.0040	.0060	.0060	.0070
	2	Ap max	0.05 x D1	390	455	520	IPT	.0030	.0040	.0040	.0050	.0060
	3	Ap max	0.05 x D1	390	425	460	IPT	.0030	.0030	.0040	.0040	.0050
S	1	Ap max	0.05 x D1	330	460	590	IPT	.0040	.0040	.0060	.0060	.0070
	2	Ap max	0.05 x D1	160	210	260	IPT	.0020	.0020	.0030	.0030	.0040
	3	Ap max	0.05 x D1	390	455	520	IPT	.0020	.0020	.0030	.0030	.0040
	4	Ap max	0.05 x D1	330	360	390	IPT	.0030	.0030	.0040	.0050	.0050
H	1	Ap max	0.05 x D1	520	720	920	IPT	.0030	.0040	.0050	.0040	.0060
	2	Ap max	0.05 x D1	460	625	790	IPT	.0030	.0030	.0040	.0040	.0050

CHIP SPLITTER • 7 FLUTE • APPLICATION DATA • INCH

Material Group												
		Side Milling					Recommended feed per tooth (fz=IPT) for side milling at ae = 2% of D1					
				WS15PE			D1 — Diameter					
				Cutting Speed — Vc SFM								
		ap	ae	min	Start	max	fraction	3/8	1/2	5/8	3/4	1
P	4	Ap max	0.02 x D1	600	800	1000	IPT	.0050	.0060	.0070	.0080	.0090
	5	Ap max	0.02 x D1	400	535	670	IPT	.0040	.0050	.0060	.0070	.0080
	6	Ap max	0.02 x D1	335	420	500	IPT	.0040	.0040	.0050	.0060	.0070
M	1	Ap max	0.02 x D1	600	680	765	IPT	.0060	.0060	.0080	.0090	.0100
	2	Ap max	0.02 x D1	400	460	530	IPT	.0040	.0050	.0060	.0070	.0080
	3	Ap max	0.02 x D1	400	430	470	IPT	.0040	.0040	.0050	.0060	.0070
S	1	Ap max	0.02 x D1	330	470	600	IPT	.0060	.0060	.0080	.0090	.0100
	2	Ap max	0.02 x D1	165	215	265	IPT	.0030	.0030	.0040	.0050	.0060
	3	Ap max	0.02 x D1	400	460	530	IPT	.0030	.0030	.0040	.0050	.0060
	4	Ap max	0.02 x D1	330	360	390	IPT	.0040	.0050	.0060	.0070	.0080
H	1	Ap max	0.02 x D1	530	730	930	IPT	.0050	.0060	.0070	.0080	.0090
	2	Ap max	0.02 x D1	470	630	800	IPT	.0040	.0040	.0050	.0060	.0070

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DISTRIBUTORS

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IMPORTANT SAFETY INSTRUCTIONS: READ BEFORE USING THE TOOLS IN THIS CATALOG

METALCUTTING SAFETY

Projectile and Fragmentation Hazards

Modern metalcutting operations involve high spindle and cutter speeds and high temperatures and cutting forces. Hot metal chips may fly off the workpiece during metalcutting. Although cutting tools are designed and manufactured to withstand high cutting forces and temperatures, they can sometimes fragment, particularly if they are subjected to over-stress, severe impact, or other abuse.

To avoid injury:

- Always wear appropriate personal protective equipment, including safety goggles, when operating metalcutting machines or working nearby.
- Always make sure all machine guards are in place.

Breathing and Skin Contact Hazards

Grinding carbide or other advanced cutting tool materials produces dust or mist containing metallic particles. Breathing this dust or mist — especially over an extended period — can cause temporary or permanent lung disease or make existing medical conditions worse. Contact with this dust or mist can irritate eyes, skin, and mucous membranes and may make existing skin conditions worse.

To avoid injury:

- Always wear breathing protection and safety goggles when grinding.
- Provide ventilation control and collect and properly dispose of dust, mist, or sludge from grinding.
- Avoid skin contact with dust or mist.

For more information, read the applicable Material Safety Data Sheet provided by WIDIA and consult General Industry Safety and Health Regulations, Part 1910, Title 29 of the Code of Federal Regulations.

These safety instructions are general guidelines. Many variables affect machining operations. It is impossible to cover every specific situation. The technical information included in this catalog and recommendations on machining practices may not apply to your particular operation.

For more information, consult the WIDIA Metalcutting Safety booklet, available free from WIDIA at +1 724 539 5747 or fax +1 724 539 5439. For specific product safety and environmental questions, contact our Corporate Environmental Health and Safety Office at +1 724 539 5066 or fax +1 724 539 5372.

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