

Tungsten Carbide HVOF Powders

PRODUCT	Powder Type	Nominal Composition (mass %)					HARDNESS (depends on deposition method & parameters)	Nominal size (µm) and manufacturing method
		Co	Ni	Cr	W	C		
JK112H	WC-12Co with fine carbides	12			Bal.	5.5	1140-1296 DPH 92.7-94.6 R15N	53/10 Agglomerated, sintered & densified.
JK112P (Also sold as JK7112)	WC-12Co with fine carbides	12			Bal.	5.5	960-1150 DPH 89-93 R15N (equiv. to HRC: ~67-71)	45/10 Agglomerated, sintered & densified.
JK114 (Also sold as JK7114)	WC-12Co with coarse carbides	12			Bal.	4	1000-1150 DPH 87-94 R15N (equiv. to HRC: ~68-71)	45/10 Agglomerated, sintered & crushed.
JK117 (Also sold as JK7117)	WC-17Co with intermediate sized carbides	17			Bal.	5.2	960-1240 DPH 90-95 R15N (equiv. to HRC: ~67-72)	53/15 Agglomerated & sintered.
JK119	WC-9Co with coarse carbides	9			Bal.	4.2	860-1170 DPH 89-94 R15N (equiv. to HRC: ~65-71)	45/5 Sintered and crushed, blocky.
JK120H (Also sold as JK7109)	WC-10Co-4Cr	10		4	Bal.	5.4	1160-1370 DPH 93-95 R15N (equiv. to HRC: ~71-73)	45/5 Agglomerated, sintered & densified.
JK120P (Also sold as JK7109)	WC-10Co-4Cr	10		4	Bal.	5.4	825-1030 DPH 89-91 R15N (equiv. to HRC: ~65-71)	53/10 Agglomerated, sintered & densified.
JK125 (Also sold as JK7175, 7176)	A mixed carbide with nickel 70%(W,Cr) _x C _y 25%WC 6%Ni		6	20	Bal.	5	900-1100 DPH 89-92 R15N (equiv. to HRC: ~66-70)	53/10 Agglomerated sintered & densified.
JK6189	WC 10Ni with large carbides		10		Bal.	3.7	Not available	53/10 Sintered and crushed

Chromium Carbide HVOF Powders ¹

PRODUCT	Powder Type	Nominal Composition (mass %)			HARDNESS (depends on deposition method & parameters)	Nominal size (µm) and manufacturing method
		Ni	Cr	C		
JK135 (Also sold as JK7184)	75% Cr ₃ C ₂ 25% NiCr	20	Bal.	9.7	610-910 DPH 87.5-91.5 R15N (equiv. to HRC: ~58-65) (varies strongly depending on spray parameters)	53/10 Agglomerated, sintered & densified

Gas Atomized Stellite[®] Cobalt Based HVOF Powders

PRODUCT	Stellite [®] Alloy Number	Nominal Composition (mass %)							HARDNESS (depends on deposition method & parameters)	Nominal size (µm)
		Co	Ni	Cr	W	Mo	C	Others		
JK571 (Also sold as JK7221)	21	Bal.	2.5	28		5.5	0.25	Si 2	400-520 DPH 80.5-84.5 R15N (equiv. to HRC: ~40-50)	53/10
JK572 (special order, also sold as JK7212)	12	Bal.		29.5	8		1.4	Si 1.5	680-675 DPH 88.1-89.5 R15N	53/10
JK573 (special order, also sold as JK7231)	31	Bal.	10.5	25.5	7.5		0.5	-	32 HRC	45/10
JK575 (Also sold as JK7201)	1	Bal.		30	12		2.5	-	755-882 DPH 89-90 R15N (equiv. to HRC: ~58-60)	53/10
JK576 (Also sold as JK7206)	6	Bal.		28	4.5		1.1	Si 1.1	495-580 DPH 81.5-86.5 R15N (equiv. to HRC: ~43-54)	53/10
JK577	SF6	Bal.	14.5	19	7.5		0.7	Si 2.5 B 1.6	635-790 DPH (505-525 when fused) ~ 85.5 R15N (equiv. to HRC: ~50-51)	53/10
JK579 (Also sold as JK7225)	25	Bal.	10	20	15	1	0.1	Si 1 Mn 1.5	450-490 DPH 82-85.5 R15N (equiv. to HRC: ~43-50) (varies strongly depending on spray parameters)	53/10

¹

Powders labelled "JK" are intended primarily for HVOF spraying with the Jet Kote[®] or Diamond Jet[®] torches but can also be used for plasma spraying. Some of these powders may be listed below in different nominal size ranges for other thermal spray processes.

Gas Atomized Tribaloy® Cobalt Based HVOF Powders

PRODUCT	Tribaloy® Number	Nominal Composition (mass %)							HARDNESS (depends on deposition method & parameters)	Nominal size (µm)
		Co	Ni	Cr	W	Mo	C	Others		
JK554 (Also sold as JK7540)	T-400	Bal.		8.5		29	<0.08	Si 2.6	450-600 DPH 86-87.5 R15N (equiv. to HRC: ~52-55)	53/10
JK558H Typically used with Hydrogen Fuel	T-800	Bal.		18		28	<0.08	Si 3.4	670-780 DPH 89-92 R15N (equiv. to HRC: ~58-64)	45/5
JK558P Typically used with carbon Fuel (Also sold as JK7580)	T-800	Bal.		18		28	<0.08	Si 3.4	455-620 DPH 83.5-88.5 R15N (equiv. to HRC: ~46-56)	53/10
JK559H (special order)	T-900	Bal.	16	18		23	<0.08	Si 2.7	~ 700 DPH	45/5
JK559P (special order)	T-900	Bal.	16	18		23	<0.08	Si 2.7	~ 500 DPH	53/10
Ultimet for JK and Plasma Spray	Ultimet	Bal.	9	26	2	5	.06	Si .3	~500 DPH	53/20

Gas Atomized Nickel Based HVOF Powders ²

PRODUCT	Alloy Name	Nominal Composition (mass %)							HARDNESS (depends on deposition method & parameters)	Nominal size (µm)
		Ni	Fe	Cr	W	Mo	C	Others		
JK347	Nistelle [®] 2347	Bal.				5		Al 6	332-336 DPH 75.3-78.1 R15N	63/15
JK350 (Also sold as JK7301)	Nistelle [®] 2350	Bal.						Al 5	285 - 335 DPH 71 - 76 R15N	63/15
JK557 (special order, also sold as JK7570)	Tribaloy [®] T-700	Bal.		15.5		32.5	<0.08	Si 3.4	~ 700 DPH	45/10
JK584 (special order, also sold as JK7640)	Deloro [®] 40	Bal.	2.5	7.5			0.25	Si 3.5 B 1.7	~ 40 HRC	53/10
JK585 (special order, also sold as JK7650)	Deloro [®] 50	Bal.	2.9	11			0.45	Si 4 B 2.3	~ 50 HRC	53/10
JK586 (Also sold as JK7660)	Deloro [®] 60	Bal.	4	15			0.7	Si 4.4 B 3.1	~ 60 HRC	53/10
JK591H	Nistelle [®] C	Bal.	5.5	16.5	4.5	17		-	400-440 DPH ~ 83 R15N (equiv. to HRC: ~44-45)	45/5
JK591P (Also sold as JK7391)	Nistelle [®] C	Bal.	5.5	16.5	4.5	17			375-390 DPH ~ 80 R15N (equiv. to HRC: ~39-41)	63/15
Nistelle [®] Super C (Jet Kote [®])	Nistelle [®] "Super C"	Bal.		23		18			410 DPH (equiv. to HRC: ~ 41)	P: 53/15 H: 45/10
JK594 (Also sold as JK7392)	Nistelle [®] C-4C	Bal.		16		16.5			380-440 DPH ~ 81-83 R15N (equiv. to HRC: ~40-44)	53/15
JK625 (Also sold as JK7342)	Nistelle [®] 625	Bal.	<5	21.5		9		(Nb+Ta) 3.7	385-460 DPH 79-83 R15N (equiv. to HRC: ~37-46)	53/20
JK718 (Also sold as JK7341)	Nistelle [®] 718	Bal.	18	19		3	0.06	(Nb+Ta) 5 Al 0.5 Ti 1	275-470 DPH 72.5-81.5 R15N (equiv. to HRC: ~25-45)	45/15

² Powders labelled "JK" are intended primarily for HVOF spraying

Gas Atomized Iron Based HVOF Powders ³

PRODUCT	Powder Type	Nominal Composition (mass %)						HARDNESS (depends on deposition method & parameters)	Nominal size (µm)
		Co	Ni	Fe	Cr	C	Others		
JK513	316 Stainless Steel		13		17	0.1	Mo 2.5 Si 1	260-315 DPH 69-75 R15N	53/10

Cobalt Based Plasma Spray Powders

PRODUCT	Tribaloy® Number	Nominal Composition (mass %)							HARDNESS (depends on deposition method & parameters)	Nominal size (µm)
		Co	Ni	Cr	W	Mo	C	Others		
Stellite 157	-	Bal.		21	4.5		<0.2	B 2.4 Si 1.5	Not available	45/5
Tribaloy® T-400	T-400	Bal.		8.5		29	<0.08	Si 2.6	52 HRC	45/5
Tribaloy® T-900	T-900	Bal.	16	18		23	<0.08	Si 2.7	52 HRC	75/D 53/10

Nickel Based Plasma Spray Powders

PRODUCT	Alloy Name	Nominal Composition (mass %)							HARDNESS (depends on deposition method & parameters)	Nominal size (µm)
		Ni	Fe	Cr	W	Mo	C	Others		
Deloro® 55	Deloro® 55	Bal.	4	12			0.6	Si 4.0 B 2.7	52-57 HRC	various
Deloro® 60	Deloro® 60	Bal.	4	15			0.7	Si 4.4 B 3.1	58-62 HRC	various
Nistelle® C276	Nistelle® C276	Bal.	5	15.5	3.8	16			Not available	106/D 45/5
Nistelle® 625	Nistelle® 625	Bal.	<5	21.5		9		(Nb+Ta) 3.7	385-460 DPH 79-83 R15N (equiv. to HRC: ~37-46)	Various
Nistelle® 2315	Nistelle® 2315	Bal.		20					Not available	106/D 75/45 45/5
Nistelle® 2350	Nistelle® 2350	Bal.						Al 5	~ 70 HRB	75/45

³ Powders labelled "JK" are intended primarily for HVOF spraying

Gas Atomized Iron Based Plasma Spray Powders

PRODUCT	Powder Type	Nominal Composition (mass %)						HARDNESS (depends on deposition method & parameters)	Nominal size (µm)
		Co	Ni	Fe	Cr	C	Others		
Delcrome [®] 90	Delcrome [®] 90			Bal.	27	2.8	Si 0.5	Not available	53/10
Delcrome [®] 92	Delcrome [®] 92			Bal.	-	3.7	Mo 10	Not available	45/D
Delcrome [®] 316L / 317	316L Stainless Steel	13		Bal.	17	0.03	Mo 2.5 Si 1	~ 180 DPH	106/38 106/D 45/5
Tristelle [®] TS-3	Tristelle [®] TS-3	12	10	Bal.	35	3	Si 5	> 55 HRC	45/5