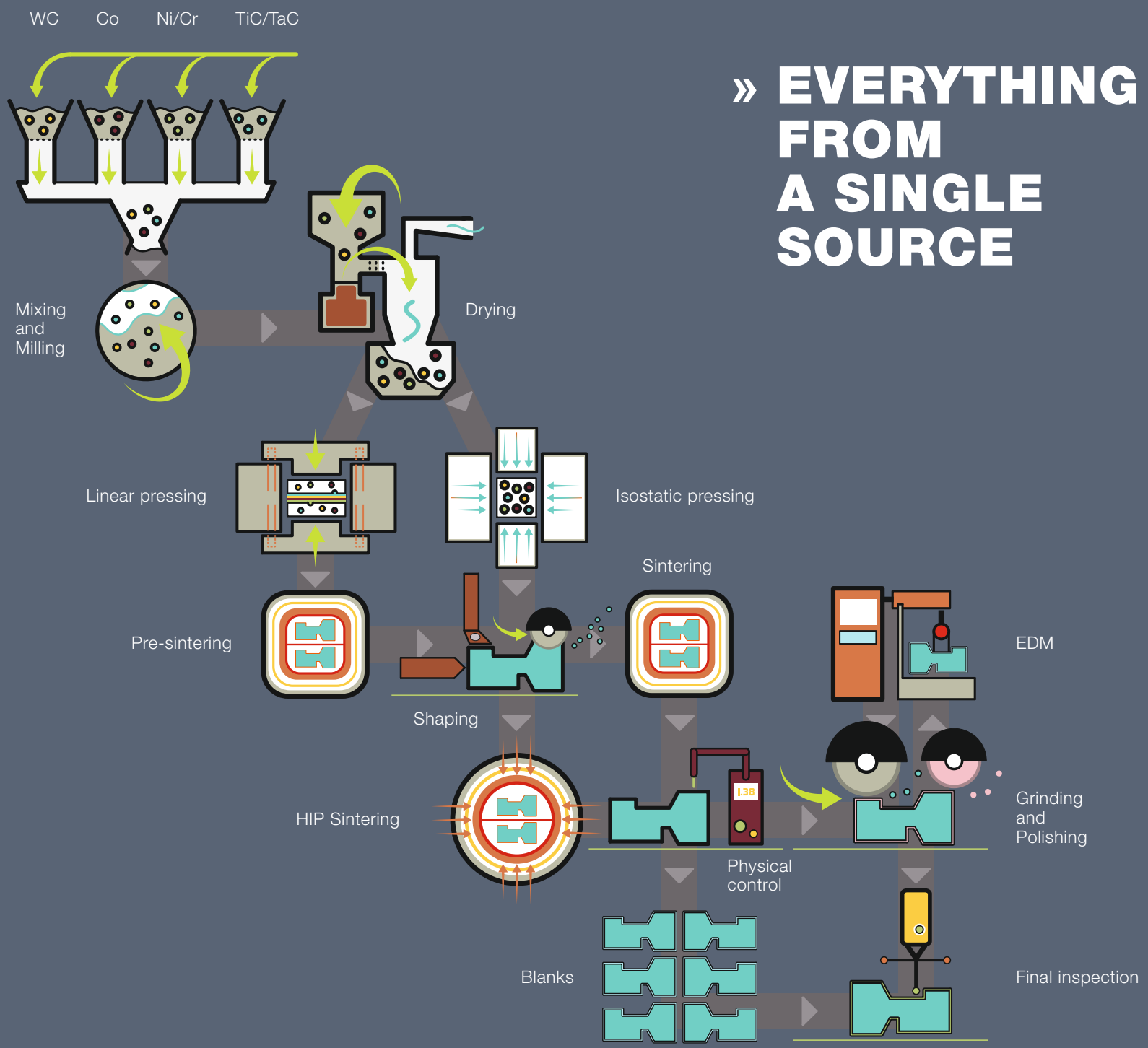
DURIT

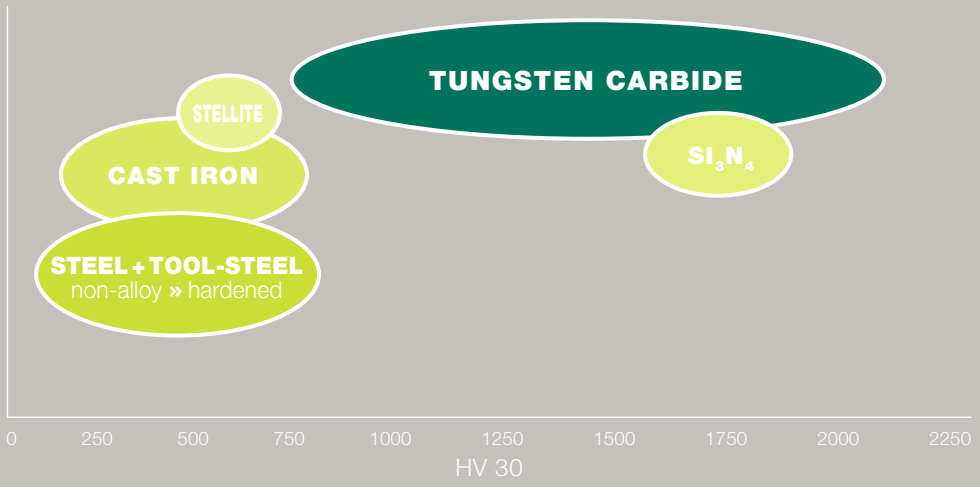
›› FACTS ON TUNGSTEN CARBIDE

» EVERYTHING FROM A SINGLE SOURCE



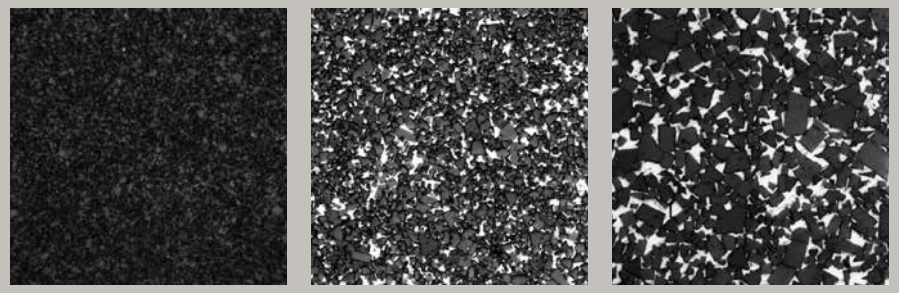
» GRADE (Special grades on request)	WC (%)	Co (%)	Ni/Cr_3C_2 (%)	Grain size	Density (g/cm^3)	Hardness (HV30)	Transverse rupture strength (N/mm^2)	Compressive strength (N/mm^2)	Fracture toughness acc. to Palmqvist ($MN/mm^{3/2}$)
GD02F	96.50	3.50	–	submicron	15.10	1970	2200	6800	7
GD03F	94.25	5.75	–	submicron	14.95	1850	2700	7000	9
GD08F	92.00	8.00	–	submicron	14.75	1625	3400	5900	10
GD13F	90.00	10.00	–	submicron	14.45	1550	3600	5700	12
GD16F	87.00	13.00	–	submicron	14.30	1400	3700	5400	13
GD18F	85.00	15.00	–	submicron	14.10	1300	3800	5400	14
GD05	94.50	5.50	–	fine	14.95	1700	2700	6100	10
GD10	94.00	6.00	–	medium	14.95	1600	3000	5500	10
GD15	92.00	8.00	–	medium	14.70	1460	2800	5400	12
GD20	90.00	10.00	–	medium	14.50	1350	3100	4500	15
GD25E	88.00	12.00	–	fine	14.30	1400	3600	4900	15
GD30	85.00	15.00	–	medium	14.00	1150	2900	4000	15.5
GD40	82.00	18.00	–	medium	13.80	1025	3000	3700	16
GD45	77.50	22.50	–	medium	13.45	920	3100	3400	18
GD50	75.00	25.00	–	medium	13.10	850	2900	3300	22
GD60	73.00	27.00	–	medium	12.95	770	2900	3200	25
GD10N	93.00	–	7.00	fine	14.85	1530	2400	5400	10
GD20N	91.00	–	9.00	fine	14.70	1400	2900	5200	10
GD08NC	91.00	–	9.00	submicron	14.60	1700	2600	4900	9
GD10NC	93.00	–	7.00	fine	14.87	1630	2470	5100	11.5
BD05	94.00	6.00	–	coarse	14.95	1400	2500	5500	15
BD10	91.50	8.50	–	coarse	14.70	1300	2600	5000	16
BD20	90.00	10.00	–	coarse	14.55	1215	2700	4700	19
BD30	88.00	12.00	–	coarse	14.35	1130	2900	4000	20
BD40	85.00	15.00	–	coarse	14.00	1000	2700	3500	24
BD50	80.00	20.00	–	coarse	13.60	850	2800	3300	27

» HARDNESS OF TUNGSTEN CARBIDE IN COMPARISON



» THE FINER THE GRAIN, THE HARDER THE MATERIAL.

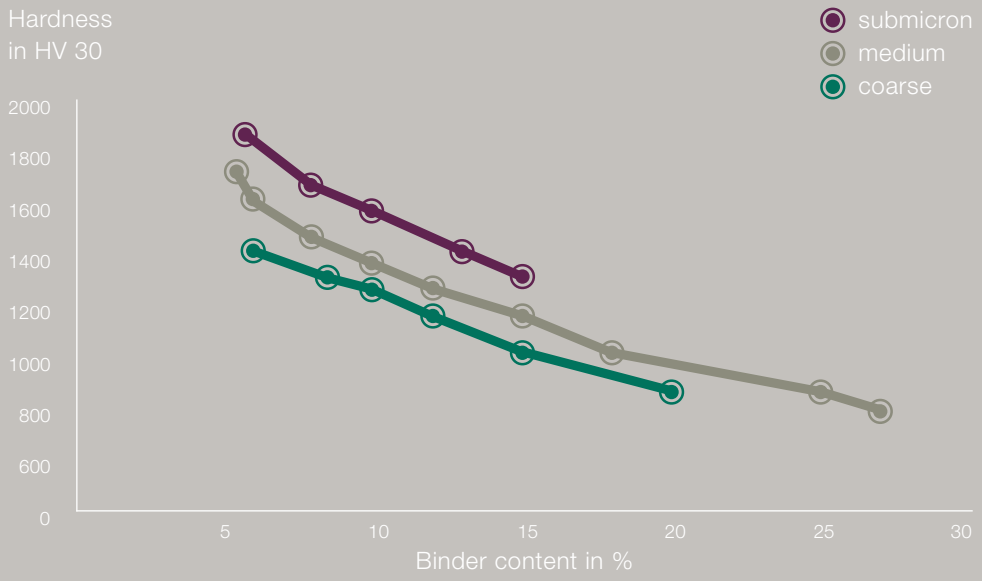
THE COARSER THE GRAIN, THE HIGHER THE FRACTURE TOUGHNESS.

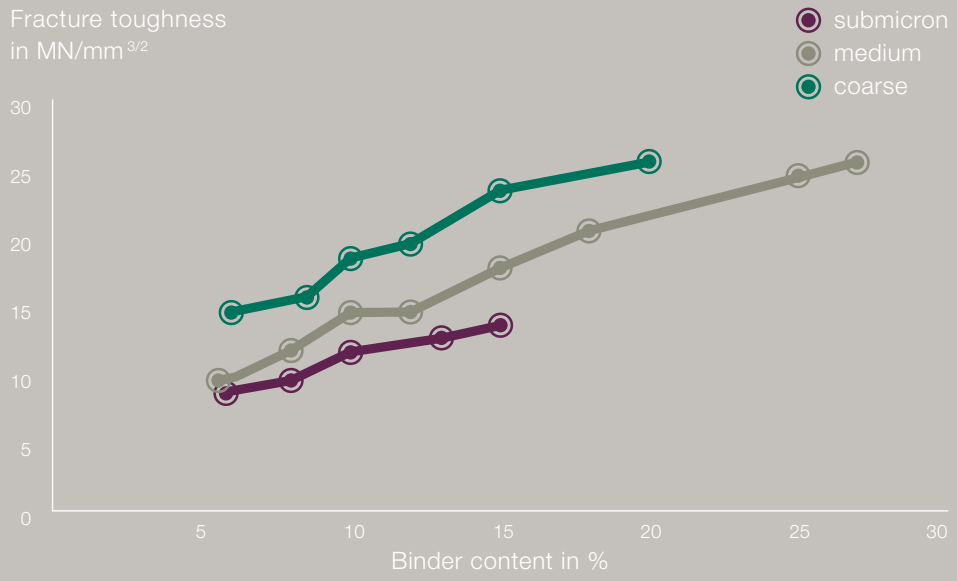


submicron grain medium grain coarse grain

Scale 1500 : 1

» THE BINDER CONTENT DETERMINES HARDNESS AND TOUGHNESS





» COATINGS FOR ALL SECTORS AND APPLICATION PURPOSES

» PVD

COATING	COLOUR	HARDNESS HV 0,05	MAX. OPERATING TEMPERATUR IN °C	FRICTION COEFFICIENT	WEAR RESISTANCE	FEATURES
HardTiN®	gold	2600	650	0.7	+	good corrosion resistance
HardTiL®	dark grey/ black	3300	850	0.5 - 0.7	++	good corrosion resistance, good toughness
HardCrom®	silver-grey	2700	900	0.3 - 0.4	+	very good corrosion resistance
HardTiC®	slate-grey	2700	450	0.2 - 0.3	+	low friction coefficient
DiExtra®	black	2700/1200	400	0.3	+	low adhesion
DiaPlus®	dark grey/ black	3300/1400	550	0.3	++	very good thermal properties
Galaxy®	dark grey/ black	3600	1100	0.5 - 0.7	++	very high temperature resistance
MoldLub®	metallic grey	2000	900	0.2	+	low adhesion
HardSilk®	metallic grey	2600	1100	0.6	+	very high temperature resistance
HardTribo®	metallic grey	3000 - 4000	900	0.4	+++	good gliding properties
UltraImpact®	grey	2500 - 3000	1000 - 1100	0.5	++	very good stability
DuraLub®	bronze	2800 - 3000	600	0.3 - 0.4	++	very good thermal properties
D-Mold®	metallic brown	2000 - 2500	850	0.3	++	low adhesion
HardCut®	black	4000	900	0.2	++++	good stability

» CVD

TiC/TiN	gold	2700	500	0.6	++	high toughness
Diamond	dark grey/ black	10000	700	0.2	+++++	low friction coefficient

» OUR PROCESSES

HVOF

High Velocity Oxygen Fuel

APS

Atmospheric Plasma Spraying

EAWS

Electric Arc Wire Spraying

» OUR COATING MATERIALS*

CARBIDES

WC/Co | WC/Co-Cr | WC/Ni | WC/NiCr | WC/NiCrBSiFe | Cr_2C_3/NiCr

CERAMICS

Al_2O_3 | TiO_2 | Al_2O_3/TiO_2 | Cr_2O_3 | Cr_2O_3/TiO_2 | Cr_2O_3/SiO | ZrO_2/CaO | ZrO_2/MgO | ZrO/YO/CeO | ZrO_2/Y_2O_3

METALS

Cu | Co | Al | Zn | Mo | NiAl | NiCr | NiCrMo | NiCrAlY

* Additional coating materials on request.

DURIT
HARTMETALL

DURIT HARTMETALL GMBH
LINDERHAUSER STRASSE 139
42279 WUPPERTAL
GERMANY
T +49 202 55 109 0
F +49 202 55 109 25
INFO@DURIT.DE
» DURIT.DE